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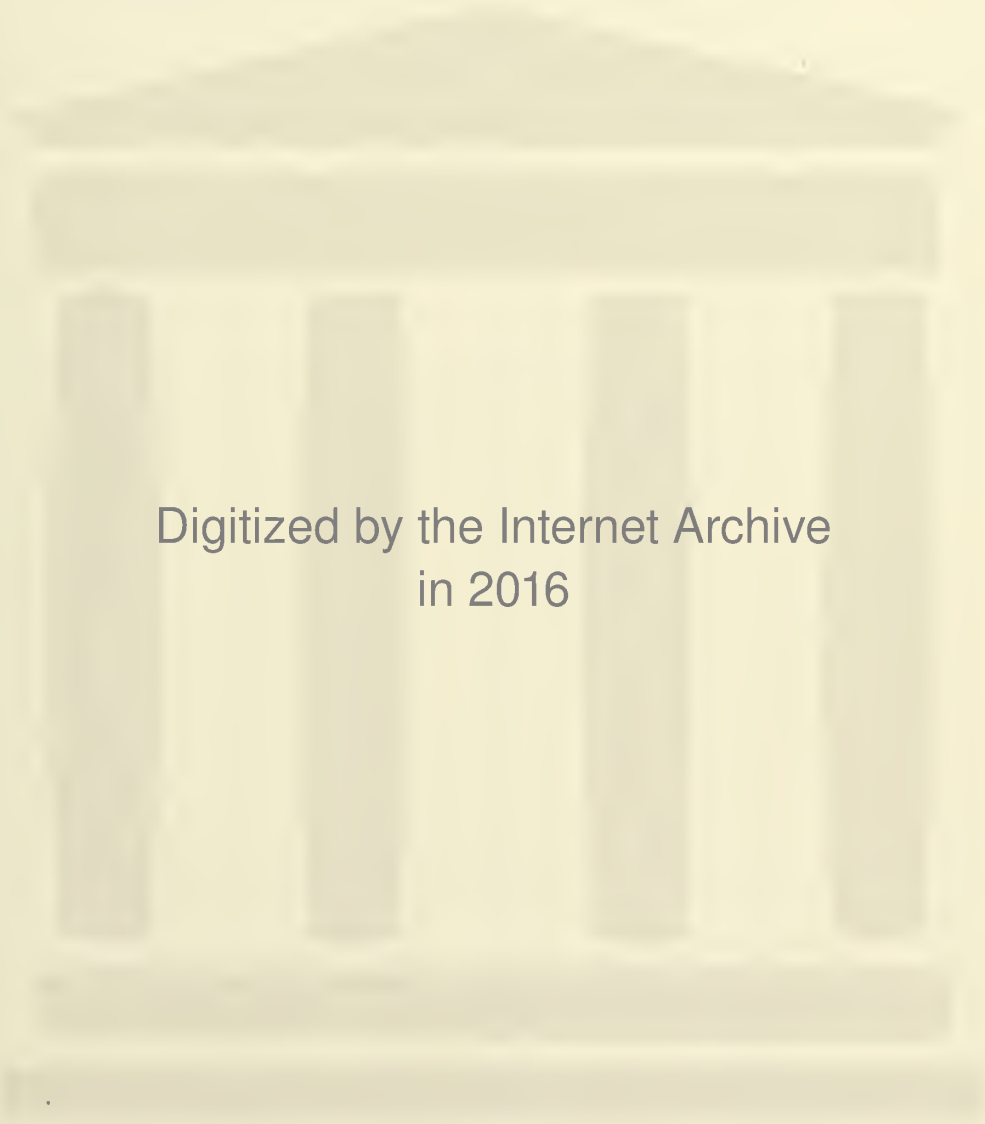


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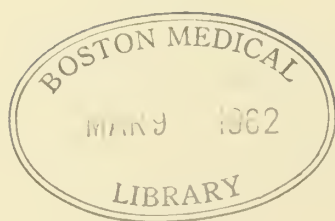






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## SURGICAL TREATMENT OF THE PAIN OF MALIGNANCY

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The pain of malignant disease constitutes one of the most depressing problems with which a practitioner is faced. These unfortunate individuals perhaps represent the most hopeless group of patients one has to see and treat. As a result of their pain, they have usually already resorted to large doses of opiates as a means of obtaining relief and, to a great extent, have some degree of addiction to drugs. The general attitude has been one of hopelessness so drugs have not been withheld and the patient has been allowed what quantities were deemed necessary to relieve his pain. Also, they constitute a group of patients who, all in all, are poor surgical risks because of the attendant emaciation associated with their disease. In the past few generations, however, amazing progress has been made in aiding them through application of anatomico-physiologic knowledge of the nervous system. This is manifest today in the multiple surgical procedures available for the interruption of pain pathways in the central nervous system.

Early attempts at relieving pain were characterized by attempting to deprive the painful area of its peripheral nerve supply. The early operations consisted of posterior root rhizotomy which usually proved ineffective. The first direct attack upon pain pathways within the central nervous system dates from 1910, at which time Frazier, at the advice of Spiller, a neurologist, selectively sectioned pain pathways within the substance of the thoracic spinal cord. Since this time techniques have been perfected and the scope of the procedure broadened. In the early days cordotomy was a fairly

satisfactory procedure for the relief of pain below the nipple line. Unfortunately, it was not generally applicable to pain above this line because of the hazards of sectioning the pain pathways within the cervical cord. Methods of anesthesia were not too well developed and the dangers of respiratory complications were great.

Approximately a decade ago, Schwartz and O'Leary, recognizing the inherent dangers of high cervical cordotomy, deliberately attacked pain pathways within the medulla (intramedullary tractotomy) as a means of relieving pain and carrying the level of anesthesia higher, to include the arm. This was a distinct improvement over cervical cordotomy because one could never be sure of the final level of analgesia, whether it would extend to include the arm segment or not. The technique, intramedullary tractotomy, has since been improved upon by both White and De Errico, and until now this affords a fairly reliable means of relieving pain in the upper extremities and neck.

An entirely new approach to the problem of pain occurred in 1947 when Freeman applied his technique of prefrontal lobotomy to the treatment of intractable pain of malignancy. The underlying principle of prefrontal lobotomy is that projection pathways from the thalamus to the prefrontal area are interrupted. The thalamus is the upper end-station of pain pathways from the entire body. The prefrontal areas are concerned primarily with one's emotional life. It had been recognized that there was a large emotional element in one's ability to appreciate pain. This introduced the concept that, if a person's pain could not be

safely relieved by other means, at least one's attitude towards the pain might be changed. Freeman's attack was through bilateral prefrontal lobotomy. More recently, Scharff and others have shown that a lobotomy, performed on the dominant side unilaterally is quite often just as effective in relieving pain as a bilateral lobotomy. These men claim this to be true no matter which side the pain originates on—dominant or non-dominant.

With present day knowledge and techniques, we therefore have a means at hand for relieving practically any pain from whatever source. To recapitulate, a long armamentarium includes such things as rhizotomy and cranial nerve sections, cordotomy performed at various levels in the central nervous system—from high thoracic to high cervical—and intramedullary tractotomy and prefrontal lobotomy, both bilateral and unilateral.

Rhizotomy, alone, has very little practicable application in relieving pain of malignancy, primarily because the area denervated is relatively small. It is altogether unsatisfactory for malignant conditions involving either the leg or upper extremity because to denervate the extremity satisfactorily would involve cutting most of the sensory rootlets from the area. This, of course, would result in a useless extremity which might be as distressing as the original pain. It does have application, however, in treating conditions of the abdominal or thoracic wall. Here, loss of function is not too important, but here, also, it is rather rare to have pain from a malignancy so restricted in location. Rhizotomy does have a definite place, however, when combined with cranial root section higher up for painful conditions of the face and throat. Here, it might be combined with section of the fifth nerve, section of the ninth, the upper few filaments of the tenth, and the upper few cervical posterior rootlets in order to denervate the face, throat, and the side of the neck completely. Here, it has a place, which will be mentioned later with the treatment of malignant conditions of the face, throat and neck.

Pain of malignant disease of the lower abdomen, pelvis and lower extremities, at least in our hands, is the most satisfactory to treat. Here a high cervical cordotomy as performed on both sides is usually very effective in relieving pain originating from malignancy involving the sacral and lower

lumbar segments. Here, we have a means of destroying the sensation of pain and temperature up to the nipple line, and usually this level will maintain itself satisfactorily, although on occasions, where the cut has not been quite deep enough, it will descend to some extent. We have rarely employed unilateral cordotomy because of the nature of the condition we are treating. Although the pain may be primarily on one side, a bilateral procedure is always employed because of the possibility of the malignancy spreading and involving pain pathways from the opposite side as well. This has usually been the case and where a unilateral cordotomy has been done. On occasions we have had to go back and perform a cordotomy on the other side because of spread. High thoracic cordotomy is particularly adaptable to pain originating in the pelvis and lower abdomen because of the lamination of pain fibers within the spinothalamic tract. It is definitely known that fibers from the lowest segments of the body have the most superficial distribution in the spinothalamic tract and these fibers are the most easily reached in making sections into the anterior quadrants of the spinal cord. We have found it important that the sections be carried deep enough, at least from the level of the dentate ligament down to a millimeter or so anterior to the emergence of the anterior roots. This section is always made three or four millimeters deep within the cord substance. On occasions, where the pain has been predominantly unilateral, the deepest section into the cord substance was made on the opposite side rather than on the homolateral side. This is because pain pathways cross within the substance of the cord and, at the high thoracic level, are all gathered into the opposite spinothalamic bundles. Because of temerity on the part of the surgeon, we have at times had to go back and make the homolateral section deeper. On one occasion, we found an anomalous distribution of the pain pathways in that they were predominantly homolateral and very little crossing had taken place. This patient had been given a standard high thoracic cordotomy and, to our surprise, had very little, if any, analgesia on the site of her intense pain. She was reopened and the contralateral incision was made much deeper. To our further surprise this made very little difference in her loss of sensation on the site of her pain. In this individual we had to assume that most of her pathways were uncrossed and that the

original operation had been ineffective. After the second operation, the patient declined having a third exploration for the purpose of making the cut on the homolateral side deeper.

High thoracic cordotomy is a safe procedure and the risks are minimal and complications are few. At times there has been some trouble with emptying the bladder but in the course of a few days or weeks this has automatically rectified itself. There has been some weakness of the lower extremities but this, we felt, was due to edema of the cord from trauma and, in any case, this complication always subsided. On one occasion postoperative bleeding occurred. It was not recognized and the patient became paraplegic. She was reopened the following day and a clot evacuated but she never obtained any return of function. She was a debilitated patient to begin with and she expired shortly from urinary complications and the ravages of her disease.

As for high cervical cordotomy and intramedullary tractotomy, our cases have been few because of the desire to wait until the techniques had been improved and the proper evaluation of results established. In this type of patient, up until the present at least, we rather preferred to do a bilateral lobotomy instead of the high section of pain pathways within the brain stem. Now that techniques are more standardized, we have done this on a few patients with gratifying results. Certainly the technique is relatively safe and, with a patient in a fair condition, this is a procedure of choice rather than a lobotomy with its attendant changes in the psychic level. It has been our feeling that patients subjected to procedures such as this should be in excellent health with at least some fair prospect of useful life afterwards. We have not chosen this procedure for seriously debilitated patients but have always done a prefrontal instead. In patients with carcinoma of the breast with brachial plexus involvement, we plan to do intramedullary tractotomies more frequently in the future provided these patients meet the requirement of being in fine physical condition with some prospect of useful life ahead.

We have had occasion to see patients with malignancy of the jaw, face and tongue. In these cases, we have preferred to do a posterior fossa exploration and section the fifth, the ninth, and the upper filaments of the

tenth, and combine this with a high cervical rhizotomy of the second and third segments. The results of these cases have been extremely gratifying. On one occasion, we had the unfortunate accident of having an air embolism and the patient expired two days after the procedure was done. Nothing was suspected in this case until time had elapsed for him to awaken from anesthesia. Intratracheal anesthesia had been used and, when the anesthetic wore off, the patient was rigid and subject to convulsive episodes. The temperature remained high and he expired on the second day.

Of all procedures, perhaps prefrontal lobotomy is less trying on the patient than any other procedure. Even a simple high thoracic cordotomy is attended with considerable postoperative pain and, in an individual who is unstrung by pain anyway, the additional pain, even for a few days, is a distressing side effect. We have used the procedure of bilateral prefrontal lobotomy in patients emaciated from their disease and we have found that, in this type individual, the psychic changes are not objectionable but are distinctly beneficial to the patient. If nothing else they take away his ability to be overly anxious about himself and also take away his ability to be over concerned about the future course of his disease. In these instances, where a lobotomy has been done, there have been occasions where the patient still complains of pain, but at least the pain no longer had the emotional drive it had formerly and such individuals were much more comfortable. We have had no deaths with this procedure and it is relatively safe and is attendant with less postoperative pain than perhaps any other procedure. Its worth, in this type patient, is inestimable. Quite often we have been able to cut out a patient's opiates entirely after a prefrontal lobotomy, and this even in the face of addiction. Certainly we know of no other procedure which is more likely to allow a patient with far advanced malignancy to pass his last days in relative comfort and freedom from mental anguish than a lobotomy.

In conclusion, we should like to say that these surgical procedures, for the relief of pain, should be done just as soon as it is recognized that a malignant condition is present causing pain. Such pain cannot be expected to improve and it is heartily recommended that if the surgical procedure is con-

templated that it be done early, before the patient is taking large quantities of opiates. Certainly the results of any surgical procedure are never as satisfactory, when it is complicated by addiction, as it is before addiction has taken place. If a person is to have a useful existence for the remainder of

the time he has left, it is advisable that the procedure be done before he has opiates at all. In this way, we feel that the patient could have the maximum comfort and usefulness until the end.

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## GYNECOLOGIC CANCER

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In women the genital tract is the second most common site for cancer, the first being the breast. Nearly 30 per cent of this disease occurring in women develops as a primary tumor in the female organs. All but carcinoma of the ovary, comprising only 10 to 12 per cent of genital tract malignancy, are accessible to inspection, palpation, and/or reliable diagnostic procedures without major surgery requiring specialized training. More than one-half of the malignancies occur in the lower genital tract and are easily accessible to biopsy for diagnosis with no more physical equipment than examining table, speculum, light, and biopsy forceps. All physicians should have this much as part of minimal office equipment.

With diligence on the part of the physician and alert cooperation on the part of women, three-fourths of these malignancies should be diagnosed in early stages or while localized, and thus lend themselves to a high percentage of curability with prompt, adequate treatment. Also, it is generally considered that nearly one-half of cervical and vulvar cancers could have been prevented by early adequate therapy aimed at eradicating those benign lesions that are factors in the etiology of cancer.

From July 1, 1945 through December 31, 1952, eight hundred twenty new cases of gynecologic cancer have been admitted to the Jefferson-Hillman Tumor Clinic. Table 1 shows the distribution of these. An unusually large number of cervical cases will be noted, although this site accounts for not more than 70 per cent of all gynecologic malignancies. This pyramiding of cervical cases is due to our State cancer therapy program which finances hospitalization and therapy for indigent patients with cancer. The ovarian and endometrial cancer cases are operated on over the State, surgery be-

TABLE 1  
GYN. MALIGNANCIES—820 CASES  
July 1, 1945-Dec. 31, 1952

	Cases	%
Cervix .....	667	81.3
Uterus .....	70	8.53
Ovary .....	43	5.24
Tube .....	1	0.12
Vagina .....	14	1.70
Vulva .....	23	2.80
Urethra .....	1	0.12
Bartholin gland .....	1	0.12
Generalized carcinomatosis .....	1	0.12

ing the primary treatment, and are not referred for treatment in as high an incidence as cervical cancer. The primary therapy for the latter is still irradiation.

Two important considerations in curing cervical cancer are: first, prompt adequate therapy and, second, extent of lesion. Is the cancer still confined to the cervix? If the lesion is still limited to the cervix, the prognosis is good. If, however, there is certainty or even probability that the lesion has advanced beyond the limits of the cervix, the prognosis becomes poor to bad. Obviously, it should be every physician's aim to diagnose carcinoma of the cervix while the tumor is still localized. This requires adequate examination with indicated laboratory tests (multiple biopsy or cytology smear) at six-month intervals. It is the responsibility of women to request their physicians to do such examinations.

It is a tragedy that of our 667 cases of cervical carcinoma less than 15 per cent were apparently confined to the cervix, and that approximately 70 per cent were classified as advanced (advanced Stage II, III, and IV—League of Nations) at the initial visit to our clinic.

Much publicity is given to the danger signals or first symptoms of cancer. Our files show that a large number of cases, whose first symptom developed only one month prior to reporting date, are diagnosed as advanced cancer on admission to the clinic. Should not the publicity, therefore, be aimed at the necessity of periodic examinations and the finding of cancer in its initial stage even before symptoms develop? The finding and eradication of benign lesions that are factors in cancer occurrence rather than enumeration of danger signals is the step ahead of symptoms. If money is to be spent to publicize the truth about cancer, let it be spent in a way to tell all of the truth as known today.

It should be said again that irradiation is the choice treatment of cervical cancer. Surgery is the choice only when microscopic study of all tissues removed by cold knife coring of the cervix proves that intra-epithelial carcinoma exists without invasion. When invasion of cancer is found in the cervix, the only type of surgery that can be considered worth while is radical total hysterectomy, with removal of regional lymph nodes. This means bilateral salpingo-oophorectomy; wide excision of parametrial tissues after exposure and lateral displacement of ureters; excision of the upper third of the vagina and removing lymph nodes along the common iliac, external iliac, and hypogastric arteries on both sides. The obturator and presacral nodes must be removed. In all, approximately 25-30 nodes by count must be removed before lymph node dissection can be considered adequate. This is extensive surgery, requiring experience, skill, adequate assistance, unlimited amount of blood, good anesthesia, and the best in operating room equipment.

It is discouraging to see the many patients referred to our clinic for x-ray treatment following simple hysterectomy with part of the cervix and tumor remaining. Within the month a patient was seen that had recently had an abdominal subtotal hysterectomy after the surgeon's own biopsy had been reported as invasive carcinoma of the cervix. At present, only few have the requisites for radical pelvic surgery that cervical cancer requires. Lacking in this, the patient should not be forced to accept the delay and further spread of disease before adequate irradiation because the surgeon wishes to try his favorite method of therapy first.

Carcinoma of the endometrium accounts for nearly 15 per cent of all genital tract malignancies of the female. In this location cancer commonly grows slowly, spreads late, and produces abnormal uterine bleeding early. This irregular bleeding, present in 95 per cent of cases, occurs usually after the menopause. All patients after the age of 35 that have acyclic bleeding from the uterus should have microscopic study of endometrium, obtained preferably by curettage, before treatment is planned. If cancer is found by such study, the plan of treatment that yields the highest percentage of cure is certainly adequate preoperative irradiation to the pelvis followed by total abdominal hysterectomy in four to six weeks. The treatment has already been discussed in more detail by us elsewhere. (W. Nicholson Jones, M. D.; G. Claiborne Blanton, Jr., M. D., and Martha Hagood, M. D.: *Endometrial Carcinoma*, The American Surgeon, September 1952, Vol. XVIII, No. 9, pp. 913-918.)

Ovarian cancer is third in order of occurrence of gynecologic cancer, accounting for approximately 10 to 12 per cent. There is wide variety in types of primary ovarian cancer, but even so the greatest incidence occurs after forty years of age. Most often it develops in one of the common type of proliferating ovarian cystic tumors, e. g., serous or pseudomucinous cystadenomas. Its malignant change and early growth are quite insidious, usually producing no symptoms until the papillary projections break through the cyst wall. Then abdominal swelling, heaviness, and dull pain are common symptoms. At this stage the cancer is rarely curable. Obviously then, ovarian cancer can not be suspected and diagnosed in its earlier stages except by periodic examinations and, if indicated, surgical exploration. Primarily this is a surgical lesion, but postoperative irradiation is helpful in control of the lesion. The surgery should include excision of the entire uterus with both adnexae. Isolated metastatic masses should be resected when possible. Postoperative irradiation offers an increasing number of comfortable years, alleviation of pain, and decreasing ascites.

It is generally considered best to remove the ovaries when doing pelvic surgery for benign lesions after fifty years of age as a preventive measure. However, the measure necessary to save more lives from ovarian cancer is the careful and adequate pelvic

examination done at six-month intervals. If persistent and significant ovarian enlargement is found, then exploration with the indicated surgery before the cancer breaks through the ovarian capsule is the treatment that will yield the most gratifying results.

Carcinoma of the vulva is a slow-growing, early metastasizing lesion that develops in women usually past 50 years of age. Commonly it follows leucoplakia, vulvar scarring from granuloma inguinale or lymphopathia venereum, Bartholin gland cyst, or pigmented nevi of the vulva. If a patient complains of an itching nodule, ulceration of a scar, or any lesion of the vulva that has persisted more than a few weeks, biopsy of the lesion should be done. If cancer is found, regardless of lesion size, radical vulvectomy (removing all of the vulva on both sides) should be done. This should be followed in 2 to 3 weeks with bilateral lymph node dissection of the groins, and the nodes above both Poupart ligaments along the iliac vessels on both sides as high as bifurcation of the aorta. The obturator and hypogastric nodes bilaterally are easily accessible for removal after medial retraction of the peri-

toneum. This procedure can be done best by two operative teams, one on each side, and thus expedite the procedure.

Nearly all women with vulvar carcinoma can be operated on regardless of age. If this two-step procedure is done adequately and reasonably early, the results should be curative in two out of three cases. X-ray has no value except in the rare basal cell type carcinoma of the vulva. Prophylaxis is valuable since the disease incidence could be reduced approximately 50 per cent by early excision of the precursor lesions referred to above.

#### SUMMARY

Gynecologic malignancies are discussed as to incidence, early recognition, method of diagnosis, prevention, and what is regarded at the present time as the best treatment for lesions of given locations. It is emphasized that nearly one-half of all gynecologic malignancies could be prevented by adequately eradicating benign related lesions, and, further, that if malignancy occurs despite good prophylactic care, at least three-fourths could be cured by early diagnosis and prompt and adequate treatment.

## LYMPHOBLASTOMA

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Malignant tumors of the lymphoid system constitute an interesting, but unfortunately, usually fatal, group of neoplasms of closely related types. These are generally referred to as lymphoblastomata or malignant lymphomata, but all differ in certain respects pathologically and clinically. Numerous classifications have been offered, but it appears that the following is simple enough for practical purposes:

- I. Lymphosarcoma
  1. Lymphocytic cell type
  2. Reticulum cell type
  3. Giant follicular lymphoma (Brill-Symmers disease)
- II. Hodgkin's disease
- III. Lymphatic leukemia

No attempt will be made in this discussion to describe the pathology in detail. However, a few differential points should be mentioned. The lymphocytic cell type of lymphosarcoma is composed of dense masses

of immature basophilic lymphocytes of uniform type with a decrease in reticular structure. In the reticulum cell type there is an increase in the reticular structure of the lymph node and large acidophilic cells, the nuclei of which are larger than the lymphocytic nuclei. The cells of the giant follicular lymphoma are derived from the germinal centers of the lymph follicles in the lymph nodes and spleen.

In contrast to the uniformity of cell type in lymphosarcoma, the cells of Hodgkin's disease are pleomorphic, the predominant types being epithelioid cells and the giant cells of Reed and Sternberg. In lymphatic leukemia the lymph nodes are packed with lymphocytes to the point where the normal architecture of the nodes is destroyed.

Clinically all of the three conditions resemble each other in that the presenting feature is that of lymph node enlargement. However, many different sites in the body

may be involved such as the tonsil, gastro-intestinal tract, lungs, bone, breast, testis, and other organs. Cutaneous and subcutaneous lesions may also be present. In addition to the lymphadenopathy, fever, weakness, loss of weight, and anemia are outstanding features of the clinical picture.

A positive differential diagnosis between lymphosarcoma and Hodgkin's disease can be made only by biopsy studies of an involved node. Certain points in the clinical course, however, may guide the physician to one diagnosis or the other. For example, lymphosarcoma generally occurs in the very young or the elderly person whereas Hodgkin's is a disease of middle age. Lymphosarcoma may frequently arise in the tonsil or gastro-intestinal tract but in Hodgkin's disease the primary site is nearly always in a lymph node. Fever is more common in the latter.

Brill-Symmers disease presents a more benign course in the early stages. Lymph node enlargement may be the only complaint. The nodes may become quite large, although painless. Treatment is followed by prompt regression with long periods of freedom from recurrences. There is an unfortunate tendency, however, for this condition to degenerate later into true lymphosarcoma, Hodgkin's disease or leukemia.

Treatment of all of the lymphoblastomata is primarily a radiologic problem although there are definite indications for surgery at times. This may be true where there is a solitary well-localized tumor, or when the primary site is in the tonsil, testis or gastro-intestinal tract. Only a very small percentage of cases can be cured and then only if the disease is detected early. Much can be done, however, to return the patient to periods of relatively good health for varying lengths of time and to maintain a feeling of hope and well-being.

In cases presenting a solitary early focus, complete surgical excision or intensive radiation therapy may serve to effect a complete cure or a long-term regression. If more than one focus is present, the problem then becomes one of palliation. Treatment in each such case must be individually planned and carried out in such a manner by radiation therapy that the integrity of the skin over the involved areas is preserved. In this way repeated courses of treatment may be given without producing painful skin

damage. Fortunately, lymphoid neoplasms will regress rapidly and completely under relatively small amounts of radiation which is all that is necessary to obtain palliation.

Within recent years interest has been aroused in certain drugs which show promise of being of value in the treatment of these conditions. Among these should be mentioned the radioactive isotopes, particularly radioactive phosphorus, nitrogen mustard, and the folic acid antagonists such as aminopterin. Nitrogen mustard has proven to be the most useful of these drugs. At certain times during the treatment of Hodgkin's disease and lymphosarcoma, radiation therapy appears to begin to become less effective. A course of nitrogen mustard consisting of 0.1 mg/kg. body-weight daily for four consecutive days usually brings about a definite clinical improvement for a few weeks. Furthermore, the effectiveness of radiation therapy thereafter appears to be improved. In the end, however, whether it be six months or six years, all treatment becomes ineffective and the patient succumbs to an overwhelming spread of the disease.

Since 1946 twenty-five cases falling into this general group have been treated in our office, primarily with radiation therapy, as follows:

Lymphatic leukemia .....	12 cases	48%
Lymphosarcoma .....	6 cases	24%
Brill-Symmers disease .....	1 case	4%
Reticulum cell sarcoma .....	1 case	4%
Hodgkin's disease .....	5 cases	20%

Of these cases, 18 are known to be dead, 5 are untraced but are presumed to be dead because of their condition at the time of last treatment, and 2 are still living with evidence of disease but under occasional treatment. One case of lymphatic leukemia has been under treatment 5½ years. The Brill-Symmers disease was treated first in December 1947 and had no return of the disease until December 1952. At the present time this patient has bilateral pleural effusion from which a non-hemolytic streptococcus has been recovered. No nodes are present, but the existence of a lymphoblastic process of the lungs or pleura has not been ruled out.

The following case reports serve to illustrate the temporary and sometimes dramatic relief which can be obtained from treatment, and the unfortunate final outcome.

## CASE REPORTS

*Case 1*—Mrs. H. White, female, age 60. Developed enlargement of right tonsil in August 1946. Tonsil removed in September. Pathologic Diagnosis: Lymphosarcoma. First developed metastatic nodes in right cervical region in September. Nodes continued to develop in neck, axillae, and inguinal regions. X-ray therapy begun September 26, 1946. Under almost continuous treatment through November 22, 1946, first to one area and then another, receiving 1500 r to 2000 r to both sides of the neck, the axillae, and both inguinal areas.

Hospitalized from December 3, 1946 to March 3, 1947 during which time she ran an irregular febrile course. General condition very poor, but x-ray therapy was not available in the hospital at that time. Returned home March 3, 1947 somewhat improved. After a few days began to develop shortness of breath which grew progressively worse. An x-ray film at the office showed complete atelectasis of left lung presumed to be due to obstruction of left main bronchus by enlarged glands in left hilus. X-ray therapy given over left hilar area anteriorly and posteriorly for 12 days. Lung expanded 75% in ten days and completely in twenty days.

Patient died at home within two or three months after last x-ray treatments.

*Case 2*—S. L. White, male, age 12. Developed recurring attacks of dyspnea, wheezing, and fever in early November 1949. Admitted to Druid City Hospital on December 8, 1949 with dyspnea and wheezing, and a brassy cough. X-ray of chest revealed large lobular mass in anterior mediastinum, measuring 11 cm. in transverse diameter. Diagnosis: Probable lymphosarcoma. Blood count: R. B. C. 3,910,000; Hgb. 81%; W. B. C. 8,750; polymorphonuclear leukocytes 50%; lymphocytes 50%. No superficial adenopathy. Sent to office daily for x-ray therapy. Received 1600 r to mediastinum anteriorly and 1500 r posteriorly in twenty-two treatments ending January 5, 1950. Mass completely disappeared by January 15, 1950. Patient remained well and apparently quite healthy until early April when he again became dyspneic. X-ray of chest revealed atelectasis of left upper lobe. X-ray therapy begun again on April 20, 1950 and continued through May 19, 1950 with total dose of 1575 r anteriorly and posteriorly over mediastinum and upper left chest. No significant

response to therapy on this series as contrasted with dramatic response on first series. Admitted to hospital on June 7, 1950 in rather poor condition. On June 11, 1950 developed extreme respiratory difficulty with evidence of bronchial obstruction. Bronchoscopy by Dr. Lawrence Woodley showed tumor tissue invading and completely blocking left main bronchus. Specimen removed for biopsy. On June 12, 1950 patient was more comfortable with less respiratory difficulty. Bronchoscopy repeated on June 14, 1950 with more tissue removed for study. Respiration considerably easier following procedure. Biopsy revealed granulation tissue and lymphosarcoma. During this hospital admission he received daily doses of x-ray beginning on June 17, 1950. Treatment was given through several ports to a total 1850 r through the tumor area. Discharged from hospital on June 20, 1950 much improved. X-ray therapy continued to July 6, 1950.

Readmitted to hospital acutely ill on July 7, 1950. Bronchoscopy repeated July 8, 1950. Tumor had invaded from left main bronchus to right main bronchus almost blocking trachea.

Patient expired July 9, 1950.

Final Diagnosis: Lymphosarcoma of mediastinum.

*Case 3*—L. B. White, male, age 20. Admitted to Druid City Hospital June 25, 1952 with history of painless swelling of right testis of one month duration. Right orchidectomy performed June 26, 1952. Tumor consisted of many lymphoid type cells but also showed certain characteristics of carcinoma. Pathologic diagnosis: Carcinoma of right testis (seminoma). Patient was given course of postoperative prophylactic radiation to abdominal lymph node chain. About five weeks after right testis was removed the left testis began to enlarge. Left orchidectomy performed August 17, 1952. Pathologic diagnosis of seminoma again made. Patient remained well until October 1952 when he developed a small subcutaneous nodule 2 cm. in diameter on anterolateral aspect of lower 1/3 of left leg. Excision and biopsy on October 4, 1952 revealed lymphosarcoma. The previous tissue sections of the two testicular tumors were reviewed, and the diagnosis revised to lymphosarcoma originating in right testis. In December 1952 the mass on the left leg recurred, and a mass

6 cm. in diameter developed in left femoral canal. Both of these masses disappeared after only 400 r of x-ray therapy were given to each area, but the dose was carried to 1200 r. On January 10, 1953 a node  $1\frac{1}{2} \times 2$  cm. developed in right cervical region and disappeared rapidly with 1200 r x-ray therapy. Was readmitted to hospital on January 21, 1953 for course of nitrogen mustard therapy. Condition improved temporarily, but began to deteriorate in a few weeks. Developed swelling of feet and ankles and a subcutaneous nodule over left eye. Developed nausea and vomiting. Second course of nitrogen mustard started on February 20, 1953. Four doses given. Excellent response. Nodule over left eye decreased in size. General symptoms improved considerably for a while. Readmitted to hospital on March 10, 1953 in very poor condition. Emaciated. Nausea and vomiting. Edema of legs. Irregular febrile course. Inguinal glands enlarged.

Patient expired April 1, 1953.

#### SUMMARY

I. Malignant disease of the lymphatic system still presents a serious problem with poor prognosis.

II. Radiation therapy is the method of choice in treatment at the present time. However, chemotherapy has proven to be of some aid, and further investigation along this line is warranted.

III. A series of 25 such cases is described briefly and 3 cases are reported in greater detail.

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**Crossed Eyes**—The therapy of crossed eyes must obviously begin with an identification of the causes, since they will determine the form which treatment must take. Therapy must be

directed at the parents even before it is applied to the child. Parents must be made to understand that the problem is one of visual function, not merely one of appearance, as they so often incorrectly believe. They must be made to understand that unless the crossing of the eyes is of nervous origin, the chances of spontaneous cure are practically nonexistent. It must be explained to them that because the development of vision occurs early in life and is completed by the sixth to eighth year, there is no justification for the general belief that the correction of the squint may safely be deferred until the child is of school age, or even later.

Actually, if treatment is delayed and if obstacles to good vision are not corrected, irreversible anatomic changes may develop in the muscles. The overstimulated muscle on the deviating side becomes hypertrophic and fibrotic, as a result of constant contraction and spasm. The antagonist muscle becomes thinned and weakened, as a result of constant relaxation. If the anomaly is monocular, failure to correct it will result in early blindness from disuse, with abnormal retinal correspondence. If it is of the alternating type, the habit of alternating suppression may develop. In either event, the goal of fusion cannot be reached.

All crossed eyes do not require surgery, though nonsurgical measures are applicable only in selected cases. Furthermore, they must be carried out precisely, over long periods of time, if they are to succeed. If surgery is necessary, the particular procedure depends upon the etiologic factor or factors responsible for the anomaly. Whatever surgical or nonsurgical measures may be applied, the goal of therapy is to eliminate potentially fatal conditions, avoid psychic disturbances, and establish stable habits of binocular vision. The achievement of the goal of good binocular vision requires: (1) good vision in each eye, (2) good motility in each eye, and (3) proper alignment of the eyes during early childhood.

A comprehension of the various etiologic factors responsible for crossed eyes requires an understanding of the essential steps in the development of binocular vision. Although the most frequent cause of the anomaly is some muscular dysfunction, it is a serious error to overlook the possibility that other causes may be responsible. Such an error may cause loss of vision, initiate highly undesirable psychic disturbances, and even lead to loss of life.—*Haik and Ellis, J. Louisiana M. Soc., May '53.*

1954 MEETING  
OF THE ASSOCIATION  
ADMIRAL SEMMES HOTEL  
MOBILE  
APRIL 15-17

## MALIGNANCIES IN CHILDHOOD

## REPORT OF A CASE OF RHABDOMYOSARCOMA

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In a general pediatric service the incidence of malignant growths in infancy and childhood is rare in relation to other conditions. Nevertheless, as a cause of pediatric mortality malignant disease is assuming an ever increasing importance at a time when advances in chemotherapeutic and antibiotic agents are leading to a progressive reduction from other causes, and the mortality rate equals or surpasses that of the more common diseases. Deaths from malignancies in several reports of large series of cases average about 9.2% of the overall deaths excluding accidents.

The type of malignancy and the location in the body differ in childhood from that in the adult. Carcinomas are relatively rare in children, while sarcomas as well as mixed and embryonal tumors are common. In children the commonest sites of origin are in the central nervous system, hemopoietic system, bone, and adrenal and renal tissue, while in adults malignancies most frequently arise from the epithelial linings of the digestive and respiratory passages, from the breast and uterus in the female, from the prostate in the male, and from the pancreas, hematopoietic and central nervous systems, the latter two systems being the only ones in which malignancies are commonly found in both children and adults.

The statistics dealing with the most common malignancies seen in children and their anatomic sites are somewhat at variance, but in most series the most common sites are the central nervous system, hematopoietic tissue, bones, adrenal and renal tissue and eye. In the Jefferson-Hillman Hospital over a ten-year period the topographic distribution of malignancies in children has been as follows:

Hematopoietic system.....	158*
Central nervous system .....	38
Bone .....	7
Genito-urinary .....	6
Adrenal .....	4
Eye .....	6
All others .....	4
Total .....	223

The malignancies which are most commonly seen on a general pediatric service, excluding the hematopoietic group, will be briefly discussed in this article, and the signs and symptoms which would lead the physician to suspect the diagnosis will be described. It should be pointed out generally that any undiagnosed illness of a long or short period of time or any change in disposition, behavior, or intelligence of a child should be warning signs to the physician of the possibility of malignant disease.

## BRAIN TUMORS

Brain tumors are not classified as benign or malignant by the same criteria, i. e., microscopic appearance of the tumor cells and metastatic potentialities, as are tumors in other parts of the body. They very rarely metastasize outside of the central nervous system, but they invade and destroy normal tissue and encroach upon vital centers which are enclosed in a relatively nonexpansile vault, the cranial cavity, thus being malignant in that they cause the death of the patient. Brain tumors in children are usually classified in the following way:

I. *Infratentorial tumors*

- A) Astrocytomas of the cerebellum.
- B) Malignant tumors of the cerebellum.
  - 1) Medulloblastoma.
  - 2) Sarcomas of the leptomeninges.
- C) Ependymomas of the fourth ventricle.
- D) Gliomas of the brain stem.

II. *Supratentorial tumors*

- A) Tumors of the hypothalamus and optic chiasm.
- B) Craniopharyngiomas.
- C) Pineal tumors.

III. *Metastatic tumors*

Over two-thirds of all brain tumors occurring in childhood are located infratentorially in the cerebellar fossa. The opposite occurs in adults, as the majority of brain tu-

\*This figure may give a false idea as to the relatively large proportion of tumors of the hematopoietic systems to other types of malignancies, as the hematology department of the Jefferson-Hillman attracts a large number of patients with leukemia from all over the State, while most of the other patients from this series were from Jefferson County alone.

mors occur supratentorially in the cerebral hemispheres, a very uncommon location for brain tumors in children.

Fortunately, astrocytomas of the cerebellum are the most frequently occurring intracranial tumor in childhood. The outlook in this type is favorable if the tumor is diagnosed early and surgically removed. They occur at an average age of 8 or 9 years with approximately equal distribution between the sexes. They usually arise in the vermis and are associated with a cyst in one of the cerebellar hemispheres. These tumors develop rather slowly, and initial symptoms are those of increased intracranial pressure, headache, nausea and vomiting, followed later by increase in head size, separation of cranial sutures and paralysis of one or both external rectus muscles. Because of the lateralization of this type of tumor it typically produces symptoms of cerebellar dysfunction which predominantly involves the extremities on one side making the child ataxic and often producing a hypotonicity and diminution of deep tendon reflexes. There is a nystagmus, with the slow component toward the side of the tumor, and often the child holds his head toward the side of the tumor.

For all practical purposes the medulloblastoma of the cerebellum, the sarcoma of the leptomeninges, and the ependymoma of the fourth ventricle cannot be differentiated clinically. The medulloblastoma which is the second most common type of brain tumor does not have as favorable an outlook as the astrocytoma, because complete surgical removal is usually impossible; and even though it does respond to x-ray initially, the treatment is usually not beneficial after two or three years. It occurs most commonly in males four or five years old. This is a very rapidly growing tumor, and it tends to spread through the pathways of the cerebrospinal fluid to produce implants of tumor on the remainder of the brain and spinal cord surface. The initial symptoms are essentially the same as those of the astrocytoma but are more rapidly progressive. The tumor usually develops in the posterior part of the midline of the cerebellum, and, because part of the vestibular mechanism is located here, the child shows unsteadiness of posture and gait, which is not a true cerebellar ataxia as evidenced by little alteration in the heel to knee and finger to nose test but is primarily a disturbance of the

vestibular apparatus. There is usually some papilledema but this may be absent in the early stages.

Tumors of the brain stem are probably more common than previously believed; many have been diagnosed as encephalitis. It is believed that about 20% of all intracranial tumors are gliomas of the brain stem. They differ in one striking way from all other intracranial tumors in that they seldom cause signs of increased intracranial pressure. They are most commonly located in the pons, although occasionally the medulla oblongata or the midbrain may be involved. The most characteristic symptoms are the paralysis of one or more cranial nerves, the sixth, seventh and the motor nucleus of the fifth being the most commonly involved. Unfortunately, there is no satisfactory treatment for tumors of this type. Most of them progress rapidly, although a few have extended over a period of several years.

Because of the infrequency of occurrence, supratentorial and metastatic tumors will not be discussed here.

#### BONE TUMORS

The two malignant bone tumors occurring in childhood are the osteogenic sarcoma and Ewing's endothelioma. Diagnosis of one of these types should be suspected if there is a complaint of pain, swelling, palpation of a mass attached to the bone, or limitation of motion of a joint. It should be kept in mind, however, that by the time pain has appeared as a symptom, there is usually considerable involvement of the bone.

X-rays are valuable aids in the diagnosis of bone tumors, but positive diagnosis should not be made until the tissue is biopsied. Osteogenic sarcomas are encountered most frequently in pubescent children and are highly malignant. Any bone in the skeleton may be involved, but the femur, humerus and tibia are most commonly involved at the metaphyseal region. This neoplasm characteristically extends small spicules of bone into the soft tissues causing the "sunburst" effect seen on x-ray. This malignancy is generally not radiosensitive.

Whereas osteogenic sarcoma is generally located in the metaphysis and is not radiosensitive, Ewing's endothelioma is most commonly found in the diaphysis and is highly radiosensitive. The same bones are involved in both types of tumors. Ewing's

tumor does not give the sunburst appearance of the osteogenic sarcoma, because there is no production of neoplastic bone extending into the soft tissues; the cortex is often thickened and split into multiple parallel laminae giving an onion skin appearance, which is suggestive but not diagnostic of this type of tumor. Chronic osteomyelitis is often difficult to differentiate roentgenographically from Ewing's tumor of bone and can be done with certainty on some occasions only by biopsy.

The treatment of any malignant tumor of bone is amputation of the part, followed by irradiation. Lung metastasis is the most common terminal event in these tumors.

Before discussing any other type of malignancy, it may be worth while to make some general statements regarding the finding of an abdominal mass on physical examination. This is the single most valuable sign and often the only manifestation of the presence of a malignancy. Roentgenography may be helpful in localizing the mass, but it is generally of little value in determining whether it is a malignancy or not. Intravenous pyelograms and barium enemas should be done with special emphasis made on obtaining lateral films. These can usually be completed within 48 hours after initial hospitalization, and surgery should be postponed no longer than that because of the rapid growth and early metastasis of malignancies in children. Excessive palpation of the tumor mass prior to operation should be avoided because of the danger of rupture of the capsule of a malignancy with spread of the lesion into surrounding tissue.

Direct surgical exploration is the only way by which accurate histologic diagnosis may be established, and the earlier this is done the greater the chances are for complete removal of the neoplasm and prevention of metastatic lesions.

#### NEUROBLASTOMA

The neuroblastoma or sympathicoblastoma arises from the sympathetic neuroblast, and the primary lesion may occur in various localities, the most common being the adrenal medulla. Other sites are the celiac plexus, the cervical, thoracic, sympathetic and intracranial as well as the peripheral nerves. It is most commonly seen under five years of age, with the greater majority occurring under 3 years of age. The clinical picture is not diagnostic; the presence of

a mass in the abdomen is the usual presenting sign. Pain in the back and legs is generally indicative of metastasis or invasion of retroperitoneal nerves. Other nonspecific signs and symptoms, such as anemia, anorexia, fever, diarrhea or constipation, are usually present. The tumor is generally encapsulated and highly vascular and composed of cells arranged characteristically in a pseudorosette fashion. If it is retroperitoneal in origin it may extend across the entire retroperitoneal space; if it has its origin in the adrenal medulla it is often difficult to exclude renal involvement. Hemorrhage and necrosis occur early and lend to the technical surgical difficulties in completely removing the tumor. The course is moderate to extensive local spread and metastasis to the liver, orbit and bone, particularly the skull.

Early diagnosis is difficult and can be made only by biopsy. Until the last few years the neuroblastoma was regarded as completely untreatable; however, there are now many cures reported with surgery alone, with irradiation alone, with surgery and irradiation, and in some cases cures have been reported after histologically proven metastases to the liver have occurred. No cures have been reported in which there have been metastases to the skull. The key points to the cure of neuroblastoma appear to be early diagnosis followed by surgery and irradiation.

#### TUMORS OF THE KIDNEY

The Wilms tumor, adenomyosarcoma or embryonal mixed tumor of the kidney, is the most commonly occurring renal neoplasm in childhood. The age range in this group varies from 2 months to 10 years, the majority occurring during the second and third year in life. It is generally agreed by most investigators that this neoplasm is a developmental tumor. The tumor is separated from the normal tissue by a connective tissue wall, but it cannot be feasibly separated from the kidney at operation without breaking through this wall, and, therefore, nephrectomy is necessary for complete removal of the tumor.

The presenting symptom is usually enlargement of the abdomen. There is a firm, non-tender, smooth mass palpable which is not mobile and generally fills as much as one-half of the abdomen. Other symptoms in the order of their frequency are fever,

abdominal pain, loss of weight, hematuria, frequency, vomiting, irritability and pallor. Pyelography gives no characteristic changes, but distention of the renal pelvis and calyces, displacement of the renal pelvis and failure of visualization of the renal pelvis may occur. Here again, accurate diagnosis cannot be made without surgical exploration.

These tumors characteristically metastasize to the lungs and from there to the brain if early treatment is not instituted.

There seems to be some difference of opinion as regards whether or not irradiation should be instituted uniformly before surgical removal of the tumor. It is agreed by all, however, that if the tumor seems too large for intact removal irradiation should precede surgery and that all cases should receive irradiation postoperatively.

The prognosis in these patients to date is still rather poor, the survival rate ranging from 15% to 25% in various reported series. As in all other malignancies in children, early diagnosis and surgical exploration seem to be the two great factors in producing higher survival rates.

The case report which follows is one of a relatively rare but highly malignant tumor, the rhabdomyosarcoma. The possibility of the presence of this type of tumor should be kept in mind in any child who has a tumor mass in the head and neck region. It is usually referred to as the embryonal rhabdomyosarcoma because of the presence of the embryonal type of striated muscle in the tumor mass. It spreads by infiltration and metastasis, the distant metastases being spread by the blood and lymph streams; regional lymph nodes are rarely involved. The tumor has a great tendency to recur locally. Treatment must be carried out early to be effective and consists of wide excision of the lesion followed by irradiation. The prognosis in this type of tumor is still rather poor, because most of them are diagnosed in the late stages; it is frequently confused with lymphosarcoma and neuroblastoma.

#### CASE REPORT

This 5 year old white female was admitted to the Jefferson-Hillman Hospital for the first time November 27, 1951, with a 6 weeks history of rapidly progressive symptoms of nasal obstruction. The child had begun to snore at night, breathe almost entirely through her mouth, talk with a nasal twang,

and had lost 10 pounds over a 7 weeks period. A tumor mass in the left nostril was found by a private physician, biopsied and diagnosed as a juvenile fibroma of the nasopharynx. Physical examination on admission revealed a poorly nourished, listless 5 year old white female with a serosanguinous nasal discharge. Other positive physical findings were a tumor mass filling the left nostril, and depression of the soft palate into the mouth by a hard mass. There was generalized shotty enlargement of the cervical, axillary, inguinal and femoral nodes. The abdomen was moderately distended with a tender liver palpable about 6 cm. below the right costal margin, and the spleen was palpable approximately the same distance below the left costal margin.

A biopsy of the nasopharyngeal mass was taken and diagnosed by the pathology department as embryonal rhabdomyosarcoma. Other laboratory findings revealed a mild hypochromic anemia and a WBC of 11,300; liver function studies were normal. Chest x-ray revealed an old healed primary tuberculous lesion and a smooth well circumscribed area of density within the left first intercostal space which was interpreted as being probably a metastatic lesion. Skull films showed a large mass almost completely filling the nasopharynx and left side of the nose causing a deviation of the septum to the right and obliterating the left antrum; there was also a large area of destruction in the base of the skull on the left involving the region of the foramina lacerum, spinosum and ovale. Widening of both the superior and inferior orbital fissures on the left was seen, and there was destruction of the left side of the hard palate and the left pterygoid plate.

While in the hospital the child developed a complete ophthalmoplegia on the left with paralysis of cranial nerves III, IV, and VI and a 2+ to 3+ papilledema. Due to her debilitated condition and probable extension and metastasis of the tumor, surgery was not thought advisable. The patient was started on x-ray therapy and treated on an outpatient basis for one week without any symptomatic improvement. She was readmitted one week later due to respiratory difficulty, dysphagia and hematemesis. A tracheotomy was performed on admission. The child went steadily downhill during this hospitalization with very rapid growth of the tumor through both nares and even

through the tracheotomy tube. She expired 2 weeks after the first day of admission.

An autopsy was performed, and the biopsy diagnosis of embryonal rhabdomyosarcoma, primary site probably the nasopharynx, was confirmed. The tumor was found to have extended to the external auditory meatus, paranasal sinuses, nares, oral cavity and pituitary gland with metastasis to the lymph nodes, lung, thyroid, kidney, adrenals and ovaries.

#### SUMMARY

This paper has been presented as a review of the most common types of malignancies in childhood, their diagnosis and treatment. A case of an embryonal rhabdomyosarcoma was reported.

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## CARCINOMA OF THE LARYNX

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Cancer of the larynx is a common and very serious disease. It may start at any point in the larynx, and its growth characteristics depend to some extent on the site of origin as well as on the histologic nature of the tumor. The terms intrinsic cancer and extrinsic cancer of the larynx are sometimes used to denote the site of origin, and sometimes to indicate the operability. It would seem to be more accurate and informative to designate the site of origin by a specific anatomic name: cancer of the left pyriform sinus, or carcinoma of the right true vocal cord with involvement of the subglottic area, for example.

#### CANCER OF THE HYPOPHARYNX

The hypopharynx (laryngopharynx or extrinsic larynx) includes the posterior pharyngeal wall, the pyriform sinus, the post-cricoid region, and the aryepiglottic fold. Tumors occurring in the hypopharynx are usually anaplastic epidermoid carcinomas which metastasize to the regional lymph nodes early in the development of the primary lesion. Frequently the presenting symptom is a mass in the neck. Unless the primary tumor is carefully sought for it can easily be overlooked. When these tumors get larger, they may cause difficulty with

swallowing, and may be painful. They do not cause hoarseness until far advanced. Unless treatment is successful, large metastatic masses form in the neck, and the host usually dies of hemorrhage, cachexia, or pulmonary complications (pneumonitis, for instance). Cancers of the hypopharynx are much more common than those of the endolarynx, and the prognosis is poorer.

#### CANCER OF THE ENDOLARYNX

The endolarynx (true larynx or intrinsic larynx) includes the laryngeal wall of the epiglottis, the false cord, the laryngeal ventricle, the true cord, and the subglottic area. Many of the tumors originating in the endolarynx are well differentiated epidermoid carcinomas which grow slowly and metastasize to the regional lymph nodes late in the course of the local disease. The presenting symptom in these cases is usually hoarseness. Slowly growing tumors, particularly in the subglottic area, may cause extreme dyspnea from laryngeal obstruction before hoarseness is apparent. It is usually very late before any difficulty is noted on swallowing. Without treatment, these cancers usually kill the patient by obstruction of the air passages or by pulmonary complications.

DIAGNOSIS

A patient presenting any one or more of the following complaints should be suspected of having cancer of the larynx until proven otherwise:

1. *Hoarseness.* This is most characteristic of lesions involving the true cord, but may be present in any laryngeal cancer.

2. *Dyspnea.* The author had one patient who was digitalized elsewhere because of dyspnea thought to be cardiac in origin, but actually due to a subglottic carcinoma which had produced a severe degree of obstruction without much hoarseness.

3. *Hemoptysis.* This occurs more frequently with lesions of the hypopharynx than the endolarynx, but is not common in either.

4. *Difficulty or pain on swallowing.* Tumors of the hypopharynx cause this more often than do those of the endolarynx.

5. *Pain in the neck.* This is fairly common in hypopharyngeal carcinoma, but unusual in endolaryngeal lesions.

6. *Lump in the neck.* This may be metastatic from any point, but is usually from somewhere in the hypopharynx.

7. *Cough.* This may be due to irritation of the upper air passages, or may be caused by pulmonary complications.

8. *Pain in the ear.* This may be associated with hypopharyngeal or endolaryngeal cancers.

9. *Chest symptoms.* Any of the symptoms of lung disease may be caused by pulmonary complications due to a laryngeal tumor.

Once the diagnosis is suspected, it can usually be easily verified by careful mirror examination of the larynx. A single negative examination should not be considered final, as many of the areas involved are difficult to check accurately. A small tumor may lurk in the pyriform sinus or be hidden on the laryngeal surface of an overhanging epiglottis. Repeated checks will materially diminish the chance of error. Direct laryngoscopy may be necessary for biopsy purposes, but is usually not required for the gross diagnosis of the lesion. X-rays of the larynx are of aid in determining the extent of the lesion, and may be useful in planning the treatment of the disease. The key to diagnosis is a high index of suspicion of cancer.

TREATMENT

Surgery and irradiation are the two tools of therapy in the treatment of cancer of the larynx. Generally speaking, the anaplastic tumors may be suitable for irradiation, and the more differentiated lesions should be considered for surgery. Large tumors, tumors already exhibiting lymph node metastases, post-cricoid, and subglottic lesions have a better chance of being permanently controlled by surgery than by irradiation. Any patient who has a recurrence following adequate irradiation should be considered for surgery as soon as the recurrence is noted. Some of these can be salvaged by extensive bloc dissections. Except for the mutilation, surgery would be the treatment of choice in the vast majority of cancers of the larynx. Since the loss of the voice is definitely disabling, it must be weighed in planning treatment. Patients with small and anaplastic cancers should be considered for irradiation. The maximum effort should be used by the surgeon or the radiologist to cure the patient. It is much better to use good, thorough irradiation by itself, or adequate wide surgery alone, than to supplement a moderate bit of surgery by a moderate amount of irradiation. Halfway measures are to be deplored.

Much of the surgery of cancer of the larynx was developed prior to the advent of blood banks, endotracheal anesthesia and antibiotics. The limited laryngectomy, in which the surrounding muscles and sometimes even the perichondrium are not removed, may have served a useful purpose but is out of date. Laryngeal fissure has few indications today. If a tumor is small enough to be cured by a fissure and partial removal of the cord, it might better be treated by x-ray initially. A lesion which is too large to be cured by partial removal of the cord should be treated by a panlaryngectomy. By panlaryngectomy is meant en bloc removal of the entire larynx, the hyoid bone, the ribbon muscles, the epiglottis, the posterior centimeter or so of the base of the tongue, and the fat, fascia and lymph nodes medial to the carotid arteries and the jugular veins. Such a procedure results in no more deformity than a limited laryngectomy, and is more adequate from an excisional standpoint. Should there be suspicious lymph nodes on either side, a radical neck dissection may be done en bloc with the laryngectomy. Occasionally bilateral radical neck dissections

may be indicated for carcinomas of the larynx, and these may be done at one operation, together with the laryngectomy. Such an extensive procedure is occasionally necessary, and can be done successfully, without undue mortality or morbidity. A surgeon should not embark on a restricted operation for as serious a disease as this unless he is prepared to take out whatever must be removed, in order to give the patient a reasonable chance of cure. The first man to operate has the best opportunity to do some good for the cancer victim, and his responsibilities are very serious.

#### CASE REPORTS

A few case reports are given to illustrate the adaptations of modern head and neck surgery to the treatment of cancer of the larynx.

1. The patient is a 63 year old Negro male who had an epidermoid carcinoma of the larynx which was very slowly progressive over a period of two years. Multiple biopsies showed only a suspicious lesion, but no frank cancer. However, because of the typical clinical course of malignancy which had produced almost complete laryngeal obstruction, a panlaryngectomy with bilateral upper neck dissection was done in one stage. The patient had a huge lesion involving the entire right side of the laryngeal lumen. Although the biopsies were not definitive, the deep sections from the larynx showed a grade II-III epidermoid carcinoma. This demonstrates the fact that different areas of a tumor may vary markedly in their histologic appearance. In this case the variation was from questionable cancer to frankly aggressive malignancy. Tumors of this size and character are eminently suitable to surgical removal, and should be permanent-

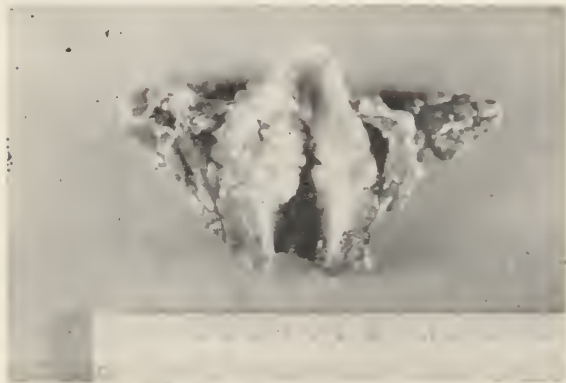


Fig. 1—Radical laryngectomy for advanced, well differentiated, epidermoid carcinoma of the true cords.



Fig. 2—Patient three weeks following radical laryngectomy.

ly controlled in a high percentage of cases. (Fig. 1 is specimen and Fig. 2 the patient.)

2. The patient is a 66 year old white male who had an epidermoid carcinoma involving the entire right true cord. Biopsy showed a grade III epidermoid carcinoma, and there were suspicious but not definite nodes in the right side of the neck. A total laryngectomy with right radical neck dissection was performed at one operation. His course was uneventful following surgery. Microscopic examination of the removed tissue in the neck dissection failed to reveal any metastatic cancer. It has been proven that serial sections of nodes will reveal metastases in a high percentage of cases that would otherwise seem to be free of them. Where an anaplastic unilateral lesion is present, a unilateral radical neck dissection in conjunction with the laryngectomy must be considered. This man has a fair prognosis. (Fig. 3 shows the amount of tissue removed by the laryngectomy and unilateral radical neck dissection combined. Fig. No. 4 is the patient.)

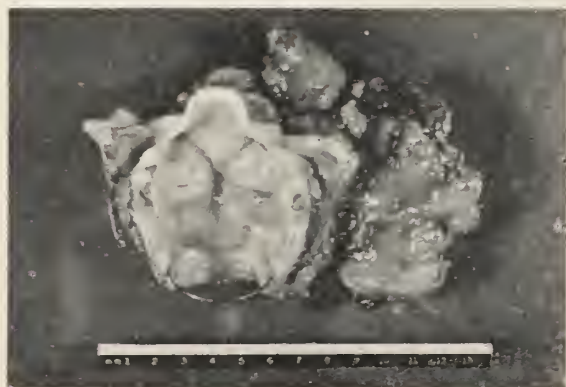


Fig. 3—Radical laryngectomy and unilateral radical neck dissection for poorly differentiated epidermoid carcinoma of the true cord on one side.

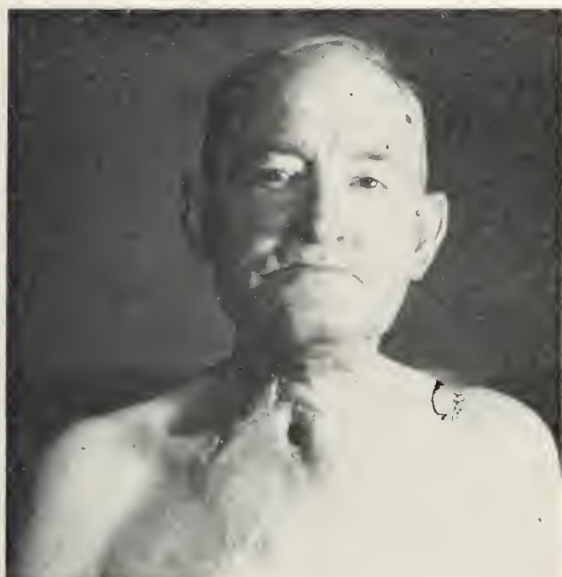


Fig. 4—Patient four weeks after radical neck dissection and laryngectomy.

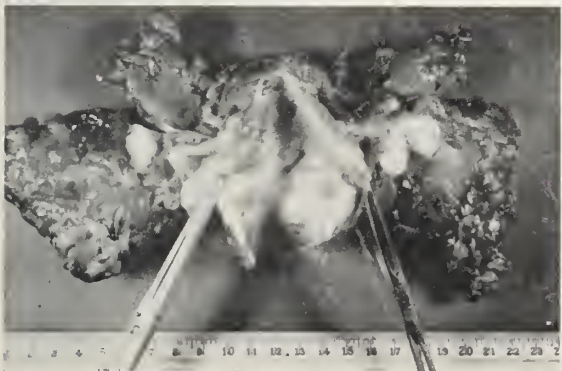


Fig. 5—Radical laryngectomy and bilateral radical neck dissection for poorly differentiated epidermoid carcinoma of the epiglottis and aryepiglottic fold with bilateral lymph node metastases as shown.



Fig. 6—Patient ten months following radical laryngectomy and bilateral radical neck dissection.

3. The patient is a 58 year old Negro male who presented an extensive lesion on the posterior aspect of the epiglottis and the

right aryepiglottic fold with bilateral cervical lymph node metastases. A panlaryngectomy with bilateral radical neck dissection was done in one stage. Parts of the lateral walls of both internal jugular veins were sacrificed, but the remaining portions were sewed together in order to preserve some of the jugular flow. Both internal jugular veins can be completely sacrificed if required. His long range outlook is not good, but he has gone eleven months without any recurrences, and nothing else could be expected to give as good a result. (Fig. 5 is the specimen, and Fig. 6 the patient.)

#### DISCUSSION

Epidermoid carcinoma of the larynx is a progressive disease which metastasizes to the regional cervical lymph nodes in a high percentage of cases. The number of metastases depends on the primary site of origin and the histologic character of the disease. Any extensive tumor is prone to spread to the regional lymphatic nodes unless it is of extremely low grade malignancy. These tumors may vary in histologic character from one area to another, and one or multiple biopsy specimens cannot be relied upon to tell the whole tale. Generally speaking, the smaller anaplastic cancer will be suitable for treatment by irradiation, and the larger and more differentiated lesions best controlled by surgery.

With modern head and neck surgery as well developed as it is, any comprehensive plan of treatment of this dread and deadly disease must include such operations as panlaryngectomy alone or in combination with unilateral or bilateral radical or partial neck dissections. The limited laryngectomy has little to recommend it except that it is easier to do. The mutilation is just as great, since the patient loses his larynx, but the scope of application is much less than the bloc dissections illustrated in the three case histories. These more extensive excisions, properly performed, carry very little more risk than the "skeletonizing" or the "subperichondrial" type of laryngectomy.

With early diagnosis, and adequate treatment, the patient with cancer of the endolarynx should have good chance of cure. The patient who has a lesion primary in the hypopharynx has a less favorable outlook, but he too can frequently be saved by proper therapy.

## SUMMARY

1. Carcinoma of the hypopharynx tends to be anaplastic and to metastasize to the regional lymph nodes at an early date.

2. Carcinoma of the endolarynx is usually well differentiated, and does not metastasize until late in the course of the disease.

3. The presenting symptoms of carcinoma of the hypopharynx or endolarynx may be hoarseness, cough, lump in the neck, pain on swallowing, pain in the neck, pain in the ear, hemoptysis, dyspnea, aspiration pneumonitis, or other chest symptoms. The differential diagnosis of these symptoms should include thorough multiple mirror examinations of the nasopharynx and larynx. Repeated examinations will frequently reveal a lesion not noted at the initial survey.

4. Both surgery and irradiation have a place in the treatment of cancer of the larynx. The surgical approach should be modified by the characteristics of the lesion, as it is frequently necessary to combine some type of neck dissection with the laryngectomy.

5. Three different combinations of panlaryngectomy and neck dissections are represented by the cases cited.

Van Antwerp Bldg.

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## PEDIATRIC CASE REPORTS

Edited by

AMOS C. GIPSON, M. D.

Gadsden, Alabama

Patient: G. V. B., age 8 years.

Chief Complaint: Rash on the skin for three weeks and stomach cramps.

Present Illness: Patient was well until three weeks prior to admission when he broke out with a red macular rash that started on his buttocks and spread to involve both extremities. It was markedly pruritic and he scratched in his sleep. His feet swelled and his trigger finger swelled where he gripped the trigger of his air rifle. About three days later he developed severe upper abdominal cramping pains, followed shortly by frequent passage of a small amount of stool that at first contained dark blood and later bright red blood. A few days after this the stool was mainly mucus and pus, with some blood in almost every stool, which has continued up to the time of admission. The stools have been frequent during the past three weeks and he has had as high as one stool every hour associated with marked tenesmus. He has had no nausea or vomiting but has had anorexia during this period. He has had no cold, cough, sore throat, headache, joint or muscular pains.

Past History: He has had measles, mumps, pertussis and chickenpox.

Physical Examination: Reveals a fairly well-developed and nourished, chronically ill, boy having frequent abdominal cramping.

He has an erythematous macular rash involving mainly the extremities and is most marked on the posterior surfaces extending down to the feet. He also has some on both hands and forearms. The individual macules are irregular in shape, about the size of a matchhead and do not blanch. There are several excoriated areas over the legs and feet.

The abdomen is flat, slight generalized tenderness, no rigidity or masses. Examination otherwise normal.

Urine: Clear.

Stool for occult blood: 4+. No amebae or parasites found. Stool culture: Nega-

tive. Smear of stool for eosinophils: None found.

Hemoglobin 13 Gms., RBC 4,220,000, WBC 10,051—polymorphonuclear leucocytes 53%, lymphocytes 34%, eosinophils 9%, basophils 1%, mononuclear leucocytes 3%.

#### *Biopsy of Rectal Mucosa:*

**Gross Description.** A number of masses of soft, red brown mucosa measure from 0.5 to 0.8 cm. in diameter and weigh together about 0.1 Gm.

**Microscopic Description.** Sections of rectal mucosa show normal mucus glands. There is some increase in fibrous tissue. There is an infiltration of lymphocytes and plasma cells, eosinophils and neutrophils. No amebae are seen. There are no evidences of malignant change noted.

**Microscopic Diagnosis.** Chronic inflammatory reaction consistent with but not diagnostic of chronic ulcerative colitis.

#### *X-Rays:*

**Barium Enema.** Barium enema fills the colon and a portion of the terminal ileum without filling defects or obstruction. There is a faint density measuring  $1 \times 1\frac{1}{2}$  cm. overlying the right kidney shadow on its medial aspect. Identity not determined on this film. Impression: Negative colon and terminal ileum.

**KUB:** Previously reported density on the right side is not visualized.

**Proctoscopic Examination:** Revealed generalized edema of bowel with loss of blood vessel and other landmarks giving characteristic "mealy" appearance of early chronic ulcerative colitis (thrombo-ulcerative type). A few very shallow ulcerations encountered and the entire surfaces bled easily when touched with applicator.

Since some of these cases have been proven to be allergic (Dr. Rowe), the child was given an egg, milk and wheat free diet. All of the symptoms cleared up and the stools were normal within three days after starting the diet, and the mucosa of the colon had returned to normal when it was examined six weeks after the diet was started. The fly in the ointment in this case is that we could not reproduce the condition when he was given a normal regular diet, so this is probably a remission that these cases are prone to develop and was coincidental to the egg, milk and wheat free diet.

He was to be tried on Cortisone if the diet failed. He has been free of symptoms for five months and is doing well.

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**Abdominal Trauma—**In the diagnosis of the lesion caused by blunt abdominal trauma one should attempt to learn, if possible, the type of force applied, the direction from which it came, and whether or not it was associated with immediate severe pain or shock. In the case of injury to the solid intra-abdominal organs, such as the liver and spleen, the subsequent symptoms are due primarily to hemorrhage, and there may be a latent interval of comparative well being between the time of injury and that of the onset of severe symptoms. It should be recalled that blood is irritating to the peritoneum, and since it will tend to pool in the most dependent portions of the peritoneal cavities, symptoms referable to these areas may be noted. For instance, free blood in the cul-de-sac or rectovesical space usually causes the patient to complain of a frequent desire to urinate or defecate.

When the hollow viscera are torn the patient usually complains of immediate pain, particularly if the viscus contains irritating contents, such as that in the stomach or duodenum. The classic picture of this type of injury is that illustrated by the acute free perforation of a duodenal ulcer. The peritoneum is bathed with a fluid containing an irritating chemical content, and the clinical picture produced is so well known as not to require further comment. Not so well appreciated perhaps is that injury to a hollow viscus in which the content is mainly infective, and in which the subsequent symptoms are produced, not primarily by chemical irritation but by bacterial infection of the peritoneum. This is illustrated by tears in the left colon in which the escaped contents may be rather firm fecal material, which at first does not produce marked symptoms.

These patients with a history of blunt abdominal trauma should be carefully questioned along the lines just enumerated and a rapid but complete physical examination carried out. This may reveal associated injuries and also gives the examiner an opportunity to evaluate the patient's general condition. The urine must be examined for blood, both gross and microscopic, and a finger inserted in the rectum in order that a specimen of fecal material may be obtained for inspection. Bright blood found in this area, for instance, suggests injury to the left colon, and may necessitate additional appropriate diagnostic procedures such as sigmoidoscopy. If the physical examination yields external signs, such as contusions, special attention must be directed toward the examination of the organs in this area, not forgetting however that blunt force is transmitted and may cause injuries to organs at a distance.—*Welborn, J. Indiana M. A., June '53.*

# THE JOURNAL

of the

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(Term: January 1, 1953-December 31, 1954)

## ROUNDUP STORY

### HOUSE OF DELEGATES

### AMERICAN MEDICAL ASSOCIATION

JUNE 1-5, 1953

The House of Delegates of the American Medical Association, in session at the Waldorf-Astoria Hotel during the 102nd Annual Meeting of the A. M. A. in New York City, took important policy actions on veterans' medical care, medical ethics, osteopathy, intern training, and a wide variety of subjects ranging from medical education to public relations.

The House also named Dr. Walter B. Martin of Norfolk, Virginia, as president-elect of the American Medical Association for the coming year. Dr. Martin will become president at the June 1954 meeting in San Francisco, succeeding Dr. Edward J. McCormick of Toledo, Ohio, who took office at a special inaugural session of the House of Delegates in the Hotel Commodore during the New York meeting.

The New York meeting was the largest ever held in the history of the American Medical Association, with the final figures on total attendance expected to reach or surpass 40,000, including nearly 18,000 physicians.

Giving unanimous approval to a recommendation from its Reference Committee on Insurance and Medical Service, submitted as a substitute for eight different resolutions concerning the treatment of non-service-connected disabilities by the Veterans Administration, the House adopted the policy that such treatment should be discontinued except in cases involving tuberculosis or psychiatric or neurologic disorders.

In taking this action the House reaffirmed and adopted the following recommendation originally presented at the Denver meeting last December by the Special Committee on Federal Medical Services:

"Your Committee recommends with respect to the provisions of medical care and hospitalization benefits for veterans in Veterans Administration and other federal hospitals that new legislation be enacted limiting such care to the following two categories:

"(a) Veterans with peacetime or wartime service whose disabilities or diseases are service-incurred or aggravated, and

"(b) Within the limits of existing facilities to veterans with wartime service suffering from tuberculosis or psychiatric or neurologic disorders of non-service connected origin, who are unable

to defray the expenses of necessary hospitalization.

"Your Committee recommends that the provision of medical care and hospitalization in Veterans Administration hospitals for the remaining groups of veterans with non-service connected disabilities be discontinued and that the responsibility for the care of such veterans revert to the individual and the community, where it rightfully belongs."

The reference committee report adopted by the House expressed complete accord with the present program of hospital and medical care for veterans with service-connected disabilities, and also included this statement:

"It is the belief of your committee that the medical profession must concern itself, not with the numbers of 'chiselers' in Veterans Administration hospitals nor with the efficacy of the Veterans Administration in the administration of enabling legislation, but rather with the broad question of whether such legislation is sound, whether the federal government should continue to engage in a gigantic medical care program in competition with private medical institutions and whether the ever-increasing cost of such a program is a proper burden to impose on the taxpayers of the country. A consideration of this problem must of course be predicated upon a concern for the health of the entire population and not just a particular segment."

Eleven resolutions dealing with publicity regarding unethical conduct of physicians were brought before the House as a result of recent newspaper and magazine articles reporting statements attributed to an official spokesman of an allied medical organization. The House adopted a committee report which recommended no action on the eleven resolutions but which reaffirmed the supremacy of the A. M. A. code of ethics and urged that the Judicial Council study suggested revisions concerning methods of billing. The reference committee report said:

"The Principles of Medical Ethics as formulated, interpreted and applied by the American Medical Association, must be considered the only fundamental and controlling application of ethics for the entire profession. Any statement relating to ethical matters by other organizations within the general profession of medicine advances views of only a particular group and is without official sanction of the entire profession as represented by the American Medical Association."

Condemning generalized statements regarding the ethics of physicians, the report went on to say:

"Your reference committee believes that the harm done to the public and to the profession by the current articles which lower the confidence patients have in their doctors cannot be objective-

ly evaluated. This highlights the fact that, when individuals or groups without official status in the American Medical Association utter or publish ill-considered statements, the result too often is that the confidence of the public in the medical profession is placed in jeopardy.

"The reference committee believes that the members of the House of Delegates have demonstrated their devotion over the years to the principles of American democracy. This devotion includes the right of free speech. With this, the Committee agrees unqualifiedly.

"Broad generalizations, ill-advised and poorly prepared statements that often fail to convey the intended meaning are most unfortunate and are to be deplored. Destructive critical comments serve no useful purpose. Your committee has the utmost confidence that the great majority of our members are entirely capable of avoiding these pitfalls without additional advice from this committee."

The report also urged that the American Medical Association continue to inform its members and the public of its stand on matters pertaining to abuses and evils in the practice of medicine.

Most controversial issue brought before the House at the New York meeting proved to be the question of immediate or deferred action on the report of the Committee for the Study of Relations Between Osteopathy and Medicine. The House, after two hours of vigorous, spirited debate, adopted the majority report of the Reference Committee on Miscellaneous Business, thereby postponing action until the June 1954 meeting and allowing further study by the delegates and the state associations.

The recommendations of the Committee for the Study of Relations Between Osteopathy and Medicine were as follows:

"1. That the House of Delegates declare that so little of the original concept of osteopathy remains that it does not classify medicine as currently taught in schools of osteopathy as the teaching of 'cultist' healing.

"2. That the House of Delegates state that pursuant to the objectives and responsibilities of the American Medical Association which are to improve the health and medical care of the American people, it is the policy of the Association to encourage improvement in the undergraduate and postgraduate education of doctors of osteopathy.

"3. That the House of Delegates declare that the relationship of doctors of medicine to doctors of osteopathy is a matter for determination by the state medical associations of the several states and that the state associations be requested to accept this responsibility.

"4. That the Committee for the Study of Relations Between Osteopathy and Medicine or a

similar committee be established as a continuing body."

A minority report of the reference committee urged approval and adoption of those recommendations at the New York meeting. The majority report, which ultimately won out, included the following recommendations by the Board of Trustees:

"Because of the length of the report and the controversial nature of the subject, the Board feels that the House should have adequate time for its study and that the state associations should have opportunity to express their opinions.

"Therefore, it is recommended that the Committee be continued but that action on the report be deferred until the June 1954 session. It is suggested that at that time the House be prepared to answer the following questions:

"1. Should modern osteopathy be classified as 'cultist' healing?

"2. Since the objectives of the American Medical Association include improvement in undergraduate and postgraduate education, should doctors of medicine teach in osteopathic schools?

"3. Should the relationship of doctors of medicine to doctors of osteopathy be a matter for determination by the several state associations?"

Five resolutions came before the House with regard to the Essentials of an Approved Internship, which were adopted at the December 1952 meeting. The Reference Committee on Medical Education and Hospitals recommended a substitute resolution which was adopted by the House after considerable discussion. The action abolishes the rule whereby approval may be withdrawn from an internship program which for two consecutive years fails to obtain at least two-thirds of its slated complement of interns. The resolution also calls for further study of the Essentials by a committee appointed by the Speaker of the House, at least half of whom are doctors in private practice not connected with medical schools or affiliated hospitals.

Among the many other actions taken, the House reaffirmed its endorsement of the principles embodied in Senate Joint Resolution No. 1 concerning international treaties or agreements which interfere with domestic laws or rights, and it approved a resolution deploring a derogatory article about the American Medical Association which appeared recently in the Home Life Magazine. The latter resolution was referred to the Board of Trustees for implementation.

Highlights of the opening day session of the House were addresses by Dr. Louis H.

Bauer, who delivered his term-end report as retiring president; Dr. Edward J. McCormick, who spoke on that day as president-elect, and Mrs. Oveta Culp Hobby, United States Secretary of Health, Education and Welfare, and selection of the winner of the 1953 Distinguished Service Award.

Dr. Bauer, referring to charges of unethical practices among some doctors, declared that all members of the medical profession "should not be tarred with the same stick."

Dr. McCormick outlined a nine-point program for further improvement in the nation's medical care and expressed the hope that "their further development will solve many of medicine's problems and eliminate much of the criticism to which we are subjected."

Mrs. Hobby told the delegates that the present administration in Washington is looking with confidence to the nation's physicians for leadership in meeting the challenge of modern medical care problems.

The 1953 Distinguished Service Award was voted to Dr. Alfred Blalock of Baltimore for his outstanding work in vascular surgery and his part in the development of the so-called "blue baby" operation. Dr. Blalock, chief surgeon at Johns Hopkins Hospital and professor of surgery at Johns Hopkins University School of Medicine, received the award during ceremonies preceding the presidential inauguration Tuesday night, June 2.

In addition to the selection of Dr. Martin as president-elect, the House also elected Dr. Carl H. Gellenthien of Valmora, New Mexico, to the office of vice-president. He succeeds Dr. Leo F. Schiff of Plattsburgh, New York.

Reelected to office were:

Dr. George F. Lull, Chicago, secretary and general manager; Dr. J. J. Moore, Chicago, treasurer; Dr. James R. Reuling, Bayside, New York, speaker of the House of Delegates; Dr. E. Vincent Askey, Los Angeles, vice speaker of the House; Dr. Edwin S. Hamilton, Kankakee, Illinois, and Dr. Gunnar Gundersen, LaCrosse, Wisconsin, as members of the Board of Trustees.

The House elected Dr. Julian P. Price of Florence, South Carolina, to fill Dr. Martin's unexpired term on the Board of Trustees.



Clinic Building, Lloyd Noland Hospital, Fairfield, Alabama

### OUTPATIENT CLINIC BUILDING FOR LLOYD NOLAND HOSPITAL

Plans for the construction of a \$750,000 modern air-conditioned outpatient clinic building addition to the Lloyd Noland Hospital have been announced by Dr. E. B. Robinson, Jr., Medical Director of the Hospital.

Official ground-breaking exercises were held on the site for the building May 19, with Mrs. James McGinn and George Felix sharing the honor of turning the first shovel of soil. Dr. Robinson presided at the brief ceremonies which were also attended by other hospital officials, and several officials from the Tennessee Coal and Iron Division of United States Steel Corporation, including Arthur V. Wiebel, president, and John Pugsley, executive vice-president.

Mrs. McGinn and Mr. Felix are charter members of the staff, having been with the hospital since its construction was begun.

Mrs. McGinn—known to her associates as Miss Katie—is said to have ridden up to the hospital site with the first load of bricks hauled to the top of Flint Ridge for construction of the building. Beginning as a member of the business staff, she set up the Medical Records Library, of which she is still librarian. She later became secretary to the late Dr. Lloyd Noland, founder and first superintendent of the hospital, and upon his death she continued in the same capacity with Dr. Robinson, his successor.

Mr. Felix, who is the chief engineer, came South from Cincinnati to help in building the hospital. A steam fitter and machinist by trade, he decided to stay with the institu-

tion after the construction work was completed. Bringing his family to Fairfield, he joined the hospital staff as a maintenance man and rose to the position of assistant house engineer. He became chief engineer several years ago.

Construction on the new three-story, 32,000-square foot masonry building will begin "within ten days and it should be completed and in operation within twelve months," according to Dr. Robinson.

"Upon its completion," Dr. Robinson said, "our new outpatient clinic will be among the most modern and best equipped in the entire South. It is the realization of still another objective in our continuing efforts to give our people the very best in medical care."

Approximately 75 per cent of the clinic operations will be transferred from the main Lloyd Noland Hospital to the new building upon its completion. Clinics to be housed in the new building, according to present plans, include pediatrics, obstetrics and gynecology, orthopedics, internal medicine and emergency. Their removal will make possible an additional 40 beds for hospital patients in the main building, and will greatly relieve otherwise crowded conditions which now exist there.

Dr. Robinson emphasized that "the erection of this splendid new addition to our hospital is the second step of a plan which had its beginning back in 1951, when the Tennessee Coal and Iron Division of the United States Steel Corporation gave this hospital to The Lloyd Noland Foundation."

He pointed out that at that time "TCI envisioned a need for just such an addition as this new clinic building to afford better medical service for the people of the western sections of Jefferson County."

"They made provision for that need, too," he said, "for in addition to presenting the hospital, all of its properties, equipment and facilities—plus a substantial cash contribution for working funds—to the Foundation, they gave an additional sum of \$750,000 specifically designated for the purpose of erecting and equipping a new outpatient clinic building to be operated in conjunction with the 315-bed Lloyd Noland Hospital."

Dr. Robinson predicted that the new clinic will enable his staff to provide "broader coverage in treatment for a greater number of people in less time than has heretofore been possible."

"Obviously," he said, "these modern facilities will enable us to provide better service for more people. Many features of our new building are designed not only for quicker and better service but for the greater comfort of the patients. Our plans include, in addition to the latest-type elevators, inner corridors for the use of doctors when attending patients from one clinic to another.

"Comfortable waiting rooms, fully air-conditioned and modernly equipped, will be available to those who find it necessary to wait even for short periods of time."

Dr. Robinson also pointed out that a snack bar had been planned for the use and convenience of all patients.

The Lloyd Noland Hospital has served people in its community since it was opened in 1919. Its present capacity of 315 beds and bassinets includes wards, semi-private and private accommodations for both white and Negro patients.

In addition to its clinics, it has a highly modern x-ray department, a fully integrated laboratory, adequate operating rooms, a laundry, a nurse's home and various other collateral equipment. The building itself is five stories high, and its grounds embrace some 41 acres.

The hospital and all of its properties, equipment and facilities were presented to The Lloyd Noland Foundation on August 29, 1951 by the Tennessee Company "for the

benefit primarily of the people of the western sections of Jefferson County."

Members of the Board of Trustees operating the Foundation are: W. A. Belcher, president, Belcher Lumber Company, Powderly; Dr. J. L. Parsons, an Ensley physician; Charles A. Long, president, Long-Lewis Hardware Company, Bessemer; E. Walker Berry, Jr., assistant vice president and manager of the Fairfield Branch of the First National Bank of Birmingham; Ralph W. Wadson, secretary and treasurer of the hospital; F. M. Hansen, hospital comptroller; and, Dr. Robinson, president and medical director.

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**The Allergic Child**—How can one recognize the possibility that a child's symptoms might be allergic? Certain clinical conditions fall into this category. Thus perennial "colds," seasonal hay fever, bronchial asthma, urticaria, contact dermatitis, some forms of infantile eczema, gastrointestinal manifestations, and chronic vascular headache are known to be of allergic etiology. Furthermore, the presence of well-established criteria, such as eosinophilia in the blood and nasal secretions, a good therapeutic response to epinephrine, a familial allergic history, the association of other allergic conditions, and a history of clinical sensitivity, all, or any of these, further strengthen the suspicion of the presence of allergy.

After determining that the presenting condition is of an allergic nature, one must proceed to investigate the cause. This is done by means of clinical study and sensitization tests. The clinical investigation includes a history and physical examination. The history frequently offers valuable clues as to etiology. Reference to any of the textbooks on allergy will help the interested physician to familiarize himself with the technique of this important diagnostic method. Among other things it includes information on the presence of colic or spasmodic croup occurring especially at night; the effect of diet, environmental changes, infection, house pets, furniture, toys, and carpets on the child's symptoms. It is not necessary to emphasize before an audience such as this the importance of a complete physical examination. This may bring to light contributory factors or pathologic conditions associated with but unrelated to the child's allergy, or diseases which may masquerade as allergic.

Sensitivity tests consist of skin tests, eye tests, and sniff tests. The skin tests include the patch test in instances of contact dermatitis. Atopic cases such as hay fever, asthma, and atopic dermatitis are tested by the scratch, the intracutaneous, or the indirect method. In reading these reactions, it must be remembered that the skin of infants may be refractory so that the reactions are slight. Constitutional reactions occur more readily in children. For this reason children's extracts should be diluted so that they are weaker than those employed for adults.—*Criep, Pennsylvania M. J., June '53.*

## THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

## AN EXAMPLE

W. A. Dozier, Jr.

## Director of Public Relations

In the past this column and other releases from this office have urged that you itemize your bills when they go out to your patients. It has been urged that you do so for the purpose of improving your patient relationships.

Recently the following sample of what can be done was brought to the attention of the writer.

# PROFESSIONAL SERVICE SLIP

Name	Date
Address _____	
Initial office visit _____	
Routine office visit _____	
Physical examination _____	
Minor surgery _____	
Hemoglobin _____	
Blood count _____	
Sedimentation rate _____	
Flood test _____	
Urinalysis _____	
Kidney function test _____	
Gastric analysis _____	
Allergy studies _____	
Electrocardiogram _____	
Basal metabolism _____	
X-ray _____	
Physiotherapy _____	
Immunizations _____	
Fertility studies _____	
_____	
_____	
_____	
Total _____	

We are always glad to discuss your account with you.  
Services received and acknowledged

Signed \_\_\_\_\_

This professional service slip is prepared in duplicate so that the physician and the patient may have a permanent record of the service and charges. The slip is in process of being changed in size so that it will better fit into a file, and other refinements would likely have to be made for each physician's office or practice.

From the viewpoint of the patient, such a statement would be most welcome. It is understood that this simple device has been very well received by the patients and that an added advantage of increased collections has been noted by the bookkeeper.

There is not a physician in the Association who could not prepare such a statement to fit his practice and his office needs. It is firmly believed that such would be beneficial to all concerned.

**Suicide**—I should like to emphasize that al-though it is commonly thought that people who talk about it a great deal are not likely to commit suicide, this is most certainly not true. It is true that people who threaten to punish someone with their suicide, or who appear to be putting on an act may not necessarily wish to die. However, the talk of suicide is usually the result of genuine suicidal impulses and results frequently in seri-ous attempts if not successful ones. The selection of suicidal attempts as a means of punishing oth-ers or of getting attention seems most certainly related to pathological suicidal drives. Even if we should consider the suicide an accident, the death is real nonetheless. When these trends are present in patients they need treatment as much as any, and it is not unusual for these people to make numerous attempts and finally succeed if not treated. A middle-aged woman had talked of suicide and had been previously hospitalized because of it, but her husband had signed her out of the hospital against advice. He said although she talked about it a great deal he was sure she wouldn't carry it out. She was tense, anxious, and fearful but showed no evidence of depres-sion. Her husband spent most of his time with her but on one occasion left her alone for approx-imately half an hour. He had a "premonition" while away that he left his razor blades available to his wife by forgetting to lock them up as he usually did. When he returned home he found her lying in a partially filled bathtub with her throat cut into her trachea.

A physician frequently needs to make the decision of whether a patient is a suicidal risk or not, or as to the degree of risk that is present. —*Loux, Rhode Island M. J., May '53.*

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## STATE DEPARTMENT OF HEALTH

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D. G. Gill, M. D.  
State Health Officer

### ALABAMA'S HOSPITALS Past, Present and Future

Contributed by  
John M. Gibson, Director  
Division of Public Health Education

The wise, eloquent but pagan Cicero said more than two thousand years ago: "The gods are pleased when we bring to the sick the blessings of health."

Humanity has been bringing that great blessing to its sick for a long, long time. For the healing art is one of the oldest known to man. For uncounted centuries the church and various secular groups have been doing what they could to restore the disabled to activity, self-support and usefulness. They have been doing that with doctors especially trained in the diagnosis and treatment of human ills. They have been doing it with nurses, who in most cases have also received special training in their part of the healing task. They have been doing it with research workers toiling through the centuries in laboratories. And they have done it with institutions of healing known by various names but most often as hospitals.

For lack of funds, Alabama has not been able to provide for its sick and injured as ably as its people would have liked. There have been acute shortages of hospital facilities from time to time. Those who were seriously but not desperately in need of such care have had to wait a few days before they could be admitted. Those who were desperately in need of it have been admitted on an emergency basis, perhaps placed in corridors or other places not intended for patients' beds. Our doctors and public health officials have wondered and dreaded at times what might happen if a serious epidemic should occur, bringing a tremendous increase in the need for hospital care.

But this State has begun to do something about its need for greater hospital facilities. After struggling along as best it could for

considerably more than a century after it was admitted into the Union, it began what might be called a hospital-building era about six years ago.

It began preparing for that new era even earlier. In 1945 the Legislature passed two Acts looking forward to the time when Federal funds would be available on a matching basis for the construction of non-profit community hospitals and public health centers. One of them (Act 211) provided for the organization of local hospital associations and set up an advisory council. The other provided for the formation of seven district tuberculosis associations to work for the construction of tuberculosis sanatoria. At its 1947 session, the Legislature provided for the levying of a special four-mill property tax for the raising of funds to acquire, construct and maintain hospitals and public health centers. A measure passed by the 1949 Legislature permitted the issuance of warrants against receipts from the already-mentioned four-mill tax. This, in effect, enabled a community wishing to build a hospital or public health center to start construction much sooner than formerly, since it eliminated the necessity of waiting until the required amount had accumulated. Thanks to that enactment, a community builds its hospital or public health center and begins getting the use of it while it is paying the special tax. Another 1949 enactment authorized a bond issue of \$2,000,000 to provide funds with which the State could match Federal funds made available under the Hill-Burton Act, about which more will be said in a few moments. (The bond issue was subsequently approved by the voters.) And finally the 1949 Legislature provided for the licensure by the State Health Department of hospitals and allied health facilities in the State. This same measure also authorized the State Health Department to formulate regulations governing the maintenance and operation of such facilities.

As already indicated, practically all of these legislative measures were enacted to enable Alabama communities to derive the fullest possible benefit from the Hill-Burton Act. This Act provided, first, for the sur-

veying of available hospital and public health center facilities in every state and, secondly, for generous Federal financial aid to communities wishing to construct needed facilities. Distribution of Federal funds has been in accordance with regulations set up (as provided in the Act itself) by the U. S. Public Health Service. In general, the Hill-Burton Act provides Federal funds on a matching basis. A considerable number of hospital and public health center projects in Alabama have been provided on the basis of 66⅔ per cent in Federal funds, the remainder coming from local sources, with the assistance of State funds made available by the already-mentioned \$2,000,000 bond issue. Thus a number of communities have been able to get needed facilities by paying approximately one-sixth of the actual cost, exclusive of the cost of the site. That must be furnished by the community.

To what extent has Alabama benefited from the generous provisions of the Hill-Burton Act and state legislative enactments?

The answer is that this State has benefited greatly. Since Federal funds became available, no fewer than 30 general hospitals have been started. Twenty-four of them have been completed and are now serving the sick and injured of their communities. Construction has begun and also ended on two mental hospitals. One tuberculosis hospital has been started and completed. Seven public health centers have been completed, and three others are under construction. Also completed have been two schools of nursing and a dental clinic. Applications are now on file for 37 additional general hospitals, four tuberculosis hospitals, two hospitals for the treatment of chronic diseases, 13 public health centers, and five schools of nursing. Both Federal and State funds have been allocated for a public health laboratory. It will supplant the old, cramped and grotesquely inadequate headquarters laboratory of the State Health Department's Bureau of Laboratories. Other public health laboratory facilities are provided by branch laboratories in Anniston, Birmingham, Decatur, Dothan, Huntsville, Mobile, Selma and Tuscaloosa. Some of these branch laboratories have already benefited from the operation of the Hill-Burton Act, as they are housed in public health centers recently constructed with Federal financial assistance provided by the Act.

If the 37 general hospitals for which applications are on file are built, then the Hill-Burton Act and subsidiary State and local measures will have provided a total of 67 institutions of that kind. That is an average of exactly one per county. This does not mean of course that every county has already built or is preparing to build a general hospital under the current program. Some have built, and plan to build two or more. Others will have none built with Hill-Burton financial aid.

Twenty cities and towns now have general hospitals which were built under the provisions of the Hill-Burton Act. Ten have public health centers made possible by Hill-Burton Act funds. Some communities have constructed both general hospitals and public health centers, combining the two in the same buildings. Those that have constructed general hospitals are Ozark, Union Springs, Tuscaloosa, Opelika, Oneonta, Reform, Roanoke, Aliceville, Vernon, Opp, Langdale, Birmingham, Mobile, Tuskegee, Montgomery, Ft. Payne, Ashland, Athens, Hamilton and Marion. Public health centers (separate units or parts of general hospitals) have been provided at Birmingham, Langdale, Selma, Ashland, Gadsden, Athens, Cullman, Livingston, Opelika and Huntsville.

The records of the State Health Department's Hospital Planning Division show that Alabama now has 123 general hospitals which have met the standards set by the Department. It has eight licensed tuberculosis hospitals. Other institutions which have met those standards and are therefore operating under the licensure law are 70 nursing homes for the aged, 26 clinic-hospitals, two maternity homes, two maternity hospitals, a pediatric hospital, an orthopedic hospital, and a psychiatric hospital. These totals include of course institutions which were in operation before the present construction program began. Included also are some constructed during the past several years without financial assistance from the Federal government. These figures, however, do not include hospitals owned by the Federal government and mental institutions operated by the state of Alabama. They were exempted from the provisions of the licensure act.

Older people recall that in their youth hospital births were rare indeed. Only the extremely wealthy were born anywhere

than in their parents' homes. Nowadays, however, home births, rather than hospital births, are rarities among the great middle class. Whereas as recently as even 1940 only about a fifth of all Alabama births occurred in hospitals, in 1951 nearly two-thirds did so. Considering the two races separately, we find that 27.2 per cent of all white births occurred in hospitals in 1940, while 85.2 per cent did so in 1951. The percentage of Negro births occurring in hospitals increased from 9.2 in 1940 to 34.7 in 1951.

It would not be correct of course to attribute these sharp percentage increases altogether to the fact that there are more hospitals and better hospitals now than formerly. Other factors have entered the equation. The wives of service men received free hospital maternity care during and for a while after the Second World War, and the advantages of that type of care became so evident that the younger brothers and sisters of the babies born in hospitals at Federal expense have also been born in hospitals, at their families' expense. Too, there has been an unusual degree of prosperity. People have had more money to spend than they used to have. And many of them have chosen to spend part of it in providing the best possible care for expectant mothers before, during and after the birth of their babies. But the fact that up-to-date hospital care has been available near at hand has undoubtedly caused many a prospective parent to have this important event occur in a hospital.

The hospitals that have been built in Alabama during the past several years have been designed by some of the country's most distinguished architects specializing in this type of structure. The equipment installed has been of the latest design. The stately buildings you see as you ride by represent the progress that has been made to date in providing the best for the sick. Architecturally and functionally, they symbolize man's recognition of his present-day responsibility to these unfortunates.

But hospitals, like medicine and many other things, do not stand still. Other changes and improvements lie in the future.

Dr. Jack Masur, Chief of the Bureau of Medical Services of the U. S. Public Health Service, took a look into the hospital future some time ago. The occasion was the 50th anniversary convention of the American

Surgical Trade Association. The subject of his address was "Hospitals: 2000 A. D."

Looking beyond the normal lifetime of most of us, he predicted that the hospital of the 21st century would probably be constructed away from congested areas. However, he believes there will be clinics within the cities for the diagnosis and treatment of ambulatory cases. Here are some other predictions of his: Hospitals will be largely limited to single stories. They will be built of shatterproof plastic and lightweight alloys. There will be few, if any, wards, every patient rating a private room. Each private room will open directly upon a patio or garden. Every room will have a private bath. The beds will be electrically operated and will contain toilets. Fluorescent lighting, with changing colors, will give the weary-eyed patient a frequent change in the color of his walls. He will have his room temperature exactly as he wants it, thanks to a wide expansion in the use of air conditioning. Ultra-violet sun rays will flood his room. Laboratory space will exceed bed space by 100 per cent. Atomic energy or solar energy will provide heat and light. Food served the patients will be aimed not only at providing nutriment. It will also play a much more important part in the cure of illness than at present. Operations that are now extremely rare or even unheard of will be commonplace, thanks to radical advances in surgery. Many other revolutionary changes are promised.

As much as the future promises, we owe much to what the past and present have provided in the way of hospitals. Alabamians have particular reason to be proud of what they have done for their sick and injured in recent years.

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No mass screening is complete until every person examined has received a final diagnosis and is assigned to a definite category for follow-up and treatment.—*Arthur C. Christie, M. D., J. A. M. A., January 10, 1953.*

In all the attention now being paid to chemotherapy, it should not be forgotten that bed rest is just as necessary as ever in the treatment of tuberculosis. All forms of collapse therapy are still useful in suitable cases. Whereas chemotherapy has not shortened the duration of hospital stay, it has helped the recovery of many patients who would otherwise have succumbed. The lives of many additional patients have been prolonged indefinitely, although the disease was not arrested.—*William S. Schwartz, M. D., The New England J. of Med., April 23, 1953.*

BUREAU OF LABORATORIES	
Thomas S. Hosty, Ph. D., Director	
SPECIMENS EXAMINED	
April 1953	
Brucella cultures.....	21
Examinations for diphtheria bacilli and Vincent's .....	151
Agglutination tests (typhoid, Brill's and undulant fever) .....	1,033
Typhoid cultures (blood, feces and urine) .....	531
Examinations for malaria .....	123
Examinations for intestinal parasites .....	3,291
Serologic tests for syphilis (blood and spinal fluid) .....	26,839
Darkfield examinations .....	9
Examinations for gonococci .....	1,585
Examinations for tubercle bacilli .....	3,261
Examinations for meningococci .....	0
Examinations for Negri bodies (microscopic) .....	208
Water examinations .....	1,546
Milk and dairy products examinations .....	4,881
Miscellaneous .....	1,963
Total 45,442	

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

	1953		E. E.* March
	Feb.	March	
Typhoid and paratyphoid fever .....	3	7	3
Undulant fever .....	0	2	5
Meningitis .....	27	21	17
Scarlet fever .....	40	37	54
Whooping cough .....	17	21	88
Diphtheria .....	10	7	20
Tetanus .....	3	2	2
Tuberculosis .....	133	160	255
Tularemia .....	3	0	2
Amebic dysentery.....	0	3	1
Malaria .....	0	1	26
Influenza .....	36895	4394	1545
Smallpox .....	0	0	0
Measles .....	506	477	485
Poliomyelitis .....	2	0	3
Encephalitis .....	2	0	0
Chickenpox .....	547	395	263
Typhus fever.....	0	1	11
Mumps .....	147	176	222
Cancer .....	470	404	269
Pellagra .....	3	1	2
Pneumonia .....	1071	358	428
Syphilis .....	167	195	1016
Chancroid .....	7	9	12
Gonorrhea .....	319	350	519
Rabies—Human cases .....	0	1	0
Positive animal heads .....	116	103	0

	March	April	E. E.* April
Typhoid and paratyphoid fever .....	7	7	5
Undulant fever .....	2	2	4
Meningitis .....	21	21	11
Scarlet fever .....	37	28	47
Whooping cough .....	21	25	97
Diphtheria .....	7	16	19
Tetanus .....	2	1	3
Tuberculosis .....	160	165	228
Tularemia .....	0	4	2
Amebic dysentery.....	3	13	5
Malaria .....	1	0	18
Influenza .....	4394	916	981
Smallpox .....	0	0	0
Measles .....	477	411	834
Poliomyelitis .....	0	9	2
Encephalitis .....	0	0	1
Chickenpox .....	395	307	274
Typhus fever .....	1	4	11
Mumps .....	176	153	226
Cancer .....	404	395	253
Pellagra .....	1	3	2
Pneumonia .....	358	270	359
Syphilis .....	195	195	891
Chancroid .....	9	8	8
Gonorrhea .....	350	299	488
Rabies—Human cases .....	1	0	0
Positive animal heads .....	103	76	0

As reported by physicians and including deaths not reported as cases.  
\*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF SANITATION

Arthur N. Beck, M. S. in S. E., Director

PHOSPHATE INSECTICIDES

Contributed by  
Walter S. Davis  
Public Health Engineer

Among the most effective of the present-day insecticides are the relatively new phosphate or organic phosphorus insecticides. Included in this group are: tetraethyl pyrophosphate, known as TEPP; hexaethyl tetraphosphate, usually referred to as HETP; o, o-diethyl o, p-nitrophenyl thiophosphate, commonly called Parathion, and o, o-dimethyl dithiophosphate of diethyl mercaptosuccinate, designated as Malathion. While these compounds are extremely effective in the control of a wide variety of plant pests, they are also extremely toxic to warm blooded animals, including man. It was, indeed, the search by the Germans, during World War II, for lethal war gases which led to their discovery and eventual use as insecticides.

To illustrate the extreme toxicity of these phosphate insecticides, the following table, based on information from the American Cyanamid Company's Malathon Manual for manufacturers, is presented.

Compound	Acute Oral Approx. LD <sub>50</sub> Mg/Kg. (Rats)	Ratio to DDT
Piperonyl Butoxide	11,500	1/46
Malathion 99 + % Tech.	1,845	1/7.4
Chlordane	457	1/2
Red Squill	300	5/6
DDT	250	1
Warfarin	160	1.56
Lindane	125	2
Toxaphene	69	3.62
Strychnine	16.2	15.4
HETP	7	35.7
Parathion	3	83.3
1080	1.7	147
TEPP	1.2	208

It should be remembered that the above order of toxicity relates only to acute oral dosage and may not hold for chronic dosages nor to skin effects. Of the phosphate insecticides listed, all, with the exception of Malathion, are much more toxic than DDT as relates to acute oral toxicity. Since little is known of the harmful effects of Malathion through skin absorption and chronic dosages, it would be unwise to assume that it is relatively non-toxic.

These phosphate insecticides have found widespread use in this country in recent years. They have thus far been used for control of agricultural, fruit, flower and nursery pests. As yet they have not been used for control of flies, mosquitoes or other insects of public health significance. Malathion, however, has been used experimentally for such purposes and shows promise along these lines.

While these insecticides have not yet been used on a large scale in Alabama, their use is increasing annually. Also, at present, there are insecticide manufacturers who are formulating wettable powders and liquid sprays from concentrated Parathion and Malathion. Parathion has been the most extensively developed insecticide of this group and several deaths have resulted from the formulation and application of it. Most of these deaths have resulted from accidental exposures or carelessness. It is highly desirable that public health personnel and the medical profession become aware of the dangers associated with the handling of these insecticides. They can be handled safely if, and only if, proper precautions are taken to prevent undue exposures. Complete recovery from severe poisoning can be accomplished if prompt and proper first aid is

administered and is followed by prompt medical attention.

Parathion and other similar insecticides inactivate the cholinesterase enzymes of the blood and tissues. "The management of acute poisoning by a cholinesterase inhibitor is a medical emergency of a type seldom if ever up to this time encountered in medical practice. The following summary of information now available should therefore be of interest to physicians.

"The systemic effects of parathion are qualitatively similar to those of other cholinesterase inhibitors, and to the effects of the acetylcholine analogues (pilocarpine, muscarine, arecoline, mecholyl, doryl). Effects of parathion are interpreted as the result of accumulation of endogenous acetylcholine at synapses of the nervous system. They include giddiness, headache, nausea, vomiting, abdominal cramps, diarrhea, miosis, sweating, salivation, lachrymation, confusion, weakness, and muscular fasciculations. A sense of tightness is felt in the chest as the bronchi constrict and fill with mucus. Fatalities appear to result from constriction and secretions in the bronchi or arrest of the heart. On the other hand, recovery from the acute poisoning is usually complete and uneventful. There has been no evidence of permanent injury in such cases.

"Treatment may be effective if atropine grains 1/100 to 1/50 (0.65 to 1.3 milligrams) is given at once and every hour or oftener as needed to keep the patient fully atropinized (mouth dry, pupils dilated). If the lungs have filled before the atropine takes effect, clear the bronchi by postural drainage. Oxygen is then indicated. Morphine is contraindicated. Muscular fatigue and weakness may reach a degree requiring artificial respiration. Following even mild symptoms no additional exposure to parathion or other phosphate esters should be allowed until time for cholinesterase regeneration has been allowed.

"Intoxication by parathion or other CE inhibitors is an acute episode of 24 to 48 hours. It is terminated by cholinesterase regeneration and is followed by period of gradually decreasing susceptibility to small exposures. Successive parathion exposures may deplete cholinesterase reserves progressively and create a susceptibility to small doses of tetraethyl pyrophosphate or vice versa. Since CE is regenerated rather

slowly in man, patients who have suffered parathion poisoning should not be permitted to experience further possible exposures to this compound until it has been established that CE blood levels have returned to normal. Parathion and other phosphate insecticides are not locally irritating, but they produce local cholinergic effects. There has been no chronic or cumulative action other than that on CE as previously described.”<sup>1</sup>

Public health personnel have a great responsibility to those persons who formulate and use these insecticides to insure that they are handled safely. Alertness on the part of physicians and hospital employees might well save the lives of some who would otherwise die through their own carelessness.

BIBLIOGRAPHY

1. Hamlin, D. O.: American Cyanamid Company; Letter to Physicians, Parathion Poisoning, July 1950.

**Injuries of the Hands and Feet**—Injuries of the hands and feet in which there is loss of skin coverage should be treated by application of thick-split grafts of skin immediately after debridement. Such grafts afford permanent, useful surface on the dorsum of hand and foot. For the palm a later reconstruction by flap of skin and fat may be necessary. Unless a defect of the sole of foot is extensive, a thick-split graft may be left permanently in place in this area as weight-bearing then is assumed by adjacent portions of the plantar pad.

Improvement in methods of soft tissue reconstruction has resulted in benefit to the patient. The now popular use of broad-based flaps has replaced the older tubed pedicle. A flap transplant requires only two operations whereas a transplant by tubed pedicle requires three or more. In addition, a more generous amount of tissue may be transplanted by the flap method. Much attention has been given to diminution of period of time between stages of operation. This has resulted in a shorter period of morbidity. Exact determination of the earliest date on which a transplanted flap may be divided has been made possible by application to these flaps of various tests for vascular efficiency which have been brought out in treatment of peripheral vascular disease of the extremities. Of all of these I have found the histamine wheal test to be most practical. Its execution requires only the agent and a hypodermic syringe and reading can be made in five to ten minutes.—*Conway, Rocky Mountain M. J., June '53.*

The antituberculosis movement synthesized in one single crusade the efforts of sociologists, humanitarians, and hygienists to improve the fate of the destitute by social reforms; to strengthen the human body by advocating a healthy way of life; to control infection by tracking and destroying the tubercle bacilli.—*Rene J. Dubos, M. D., Am. Rev. Tuberc., July '53.*

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR FEBRUARY 1953 AND COMPARATIVE RATES

Live Births Stillbirths and Deaths by Cause	Number Registered During February 1953			Rates* (Annual Basis)		
	Total	White	Colored	1953	1952	1951
Total live births .....	6093	3644	2449	25.0	26.6	26.7
Total stillbirths .....	137	65	72	22.0	24.8	25.2
Deaths, stillbirths excluded .....	2543	1399	1144	10.5	8.8	9.6
Infant deaths:						
under one year .....	233	96	137	38.2	38.6	42.6
under one month .....	149	66	83	24.4	23.6	24.6
Cause of Death						
Tuberculosis, 001-019 .....	46	20	26	18.9	20.5	27.7
Syphilis, 020-029 .....	4		4	1.6	4.0	5.0
Dysentery, 045-048 .....	3	2	1	1.2	0.4	1.3
Diphtheria, 055 .....	2		2	0.8	0.4	1.3
Whooping cough, 056 .....					0.8	0.4
Meningococcal infec- tions, 057 .....	9	4	5	3.7	2.4	0.4
Poliomyelitis, 080, 081 .....	1	1		0.4	0.8	
Encephalitis, 082, 083 .....					0.4	
Measles, 085 .....					1.2	
Malignant neoplasms, 140-205 .....	234	179	55	96.2	94.5	78.6
Diabetes mellitus, 260 .....	38	21	17	15.6	14.9	14.3
Pellagra, 281 .....	2	2		0.8	1.2	0.4
Vascular lesions of central nervous sys- tem, 330-334 .....	281	144	137	115.5	97.4	109.6
Other diseases of nerv- ous system and or- gans of special sense, 340-398 .....	25	9	16	10.3	11.3	18.1
Rheumatic fever, 400-402 .....	2	1	1	0.8	2.0	1.7
Diseases of the heart, 410-434 .....	596	385	211	245.1		
Hypertension with heart disease, 440- 443 .....	215	100	115	88.4	266.7	296.2
Diseases of the arte- ries, 450-456 .....	40	30	10	16.4	17.7	12.6
Other diseases of cir- culatory system, 444-447, 460-468 .....	39	21	18	16.0	9.2	8.8
Influenza, 480-483 .....	149	77	72	61.3	19.3	17.6
Pneumonia, all forms, 490-493 .....	163	64	99	67.0	35.8	62.2
Bronchitis, 500-502 .....	6	3	3	2.5	1.2	2.9
Appendicitis, 550-553 .....	2	1	1	0.8	0.8	0.8
Intestinal obstruction and hernia, 560, 561, 570 .....	6	5	1	2.5	6.0	3.8
Gastro-enteritis and colitis (under 2) 571.0, 764 .....	1	1		0.4	5.6	2.5
Cirrhosis of liver, 581 .....	6	3	3	2.5	6.4	5.9
Complications of preg- nancy and child- birth, 640-689 .....	6	2	4	9.6	14.8	12.3
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 682, 684 .....	1	1		1.6		1.5
Congenital malforma- tions, 750-759 .....	26	15	11	4.3	3.0	3.0
Accidental deaths, total, 800-962 .....	146	96	50	60.0	62.8	67.2
Motor vehicle acci- dents, 810-835, 960 .....	57	45	12	23.4	25.3	21.0
All other defined causes .....	354	177	177	145.6	140.4	153.8
Ill-defined and un- known causes, 780- 793, 795 .....	141	36	105	58.0	43.4	53.8

\*Rates are expressed as follows: birth and death rates per 1,000 population; infant death rate per 1,000 live births; stillbirths per 1,000 deliveries; maternal deaths per 10,000 deliveries; deaths from specified causes per 100,000 population.

## BOOK ABSTRACTS AND REVIEWS

**Brain Surgeon.** The Autobiography of William Sharpe. With a foreword by John Haynes Holmes. Cloth. Price, \$3.75. Pp. 271. New York: The Viking Press, 1952.

Dr. William Sharpe, as a surprisingly large number of people do not know, is one of the country's outstanding surgeons operating upon the human brain. This is, as its subtitle points out, the story of his life.

But it is much more than his professional autobiography. It is the story of an eager youth growing up in the slum districts of large cities. It is the story of a youngster who planned to get a Harvard education by his rowing ability, failed in that and won a banker's income from coaching lazy and dull fellow-students. It is the story of a young man's trip to Europe, in which he drank hungrily at the fountains of medical knowledge, fell in love and almost changed his religion. It is a story of many other steps in preparing for a distinguished career and making the most of that career.

Like many another young doctor at Johns Hopkins, he knew, was inspired by and suffered under the immortal but stormy Harvey Cushing, whom he served as assistant resident after completing his medical education—that part of it at least which ends with college—at Harvard Medical School. The two did not get along any too well at first. But he pays Dr. Cushing a warm tribute as a great teacher and masterful surgeon.

Brain Surgeon is full of gripping experiences, which the author describes well. One of the most absorbing, too long to be recounted here, had to do with an assignment from Dr. Cushing to get to Washington by the next train, perform an autopsy upon a giant of a man who had already been placed in his casket at the undertaking establishment and was too heavy to be removed and get through in time for the funeral that afternoon. (He did it. But the friends and relatives of the dead giant were gathering in the nearby chapel when he finished, and some were asking about the delay in starting the services.)

In Shanghai, as professor of surgery at the Harvard Medical School of China, he was asked to perform an operation on the oldest son of China's President, who had received a brain injury in a fall from his horse. Under ideal operating conditions, the chances of the patient's surviving the operation were extremely slight. And operating conditions were far from ideal in that surgically backward country. These things Dr. Sharpe knew. What he did not know until later was that, had the patient died, "the mother undoubtedly would have managed my death, too." The patient did not die. The operation served its purpose. And Dr. Sharpe found himself the recipient of honors, feasting and praise galore.

Then there was the trip he made to Europe, in which he met Hitler and Stalin. After leaving

his conference with the former, he told a German friend he considered the Fuhrer "mildly maniacal" and was afraid that "unless he quiets down he is going to break." Stalin's greeting to the visiting American was "cordial but restrained." He took these meetings with dictators in stride. What completely unnerved him on that trip was finding that he was expected to go swimming at Sevastopol, the Black Sea resort, altogether clothesless. He was relieved to find that nude bathing was new to no one there except himself. The others had not paid any attention to him.

Like most men who have lived fairly long and quite actively, Dr. Sharpe has developed certain enthusiasms. Conspicuous among them is the curbing of cerebral palsy, or cerebral spastic paralysis, if you like that term better. And he is a particularly firm believer in the prevention of this fearsome condition. Prevention, he says, "in over seventy per cent of the cases, is far more effective than trying to cure it." And, in his mind, the secret of prevention is the best possible prenatal and obstetrical care. This is to minimize the danger of intracranial hemorrhage at birth.

But many, many babies and former babies, and their parents, are indebted to Dr. Sharpe for remarkable recoveries from cases of this kind that were not prevented. They have reason to be grateful for the magic of his surgical touch. They and many others can enjoy his story telling how he performed those healing operations.

This is a stirring narrative, told with the artistry of a man who knows how to dramatize the outstanding, colorful happenings of his long and useful personal and professional life. Not only men and women of medicine but also the general reader will find it highly interesting.

John M. Gibson

**The Scalp in Health and Disease.** By Howard T. Behrman, A. B., M. D., Assistant Clinical Professor of Dermatology, New York University Post-Graduate Medical School. Cloth. Price, \$12.75. Pp. 556, with 312 diagrams and illustrations. St. Louis: The C. V. Mosby Co., 1952.

This excellent reference book covers a field which is notably neglected in ordinary dermatologic texts. It is a valuable aid for anyone called on to treat diseases of the scalp and hair.

This book opens with a chapter on embryology, anatomy and physiology, followed by a chapter on the care of the normal scalp and hair.

Diseases of the scalp and hair are fully discussed in seven chapters including chapters on baldness and new growth.

The closing section is devoted to many tried and valuable prescriptions for the normal as well as the diseased scalp.

F. W. Riggs, M. D.

**Scientific Principles in Nursing.** By M. Esther McClain. Second edition. Cloth. Price, \$3.50. Pp. 449, illustrated. St. Louis, C. V. Mosby Co., 1953.

Miss McClain, who is an instructor in nursing arts at Providence Hospital School of Nursing in Detroit, has revised the 1950 edition of her book. In the preface she explains that her purpose in writing the book is to show how some basic scientific principles may be used in nursing practice. This book does not pose as a complete text of nursing techniques. Hence its use is as an adjunct to the more exhaustive nursing arts textbooks.

In this 1953 edition a much more comprehensive chapter on public health has been included, and the chapter on radiation has been considerably expanded. There are additional illustrations, including diagrams, in this edition.

The form of the second edition is the same as the previous one. Customarily, each chapter contains a discussion under each scientific heading of the applications to nursing. Miss McClain's writing is characterized by simplicity and specificity. A typical chapter's divisions are: introduction, definitions, objectives, equipment, scientific principles (anatomy, physiology, microbiology, chemistry, pharmacology, physics, sociology), learning situations for the patient, and summary.

It is to be noted that this edition incorporates more information of both background and immediate connotation for the nurse in first level positions in public health than did the previous edition. This expands the use of the text in the basic professional nursing program.

This reviewer sees the book as of particular use as a quick reference on the ward for all levels of nursing personnel, and for the beginning nursing arts class wherein the aim is to alert the beginning student to the underlying scientific principles in nursing. The book is a very handy reference for nursing procedure committees. It has been observed that Miss McClain's book is popular with those nurses who have become acquainted with it.

Mercedes Pittman, R. N.

**The United States Public Health Service, 1798-1950.** By Ralph Chester Williams, M. D., Assistant Surgeon General, United States Public Health Service. Cloth. Price, \$7.50. Pp. 890, with 194 illustrations. Bethesda, Maryland: Commissioned Officers Association of the United States Public Health Service, 1951.

Soon after the British Isles were saved from the gravest danger that had threatened them prior to 1940, the nation decided to show its gratitude to the seamen who had humbled the Spanish Armada. This expression took the form of providing hospital care for sick, disabled and aged British seamen.

The grateful Britishers kept a good grip on their gratitude, however: Eager as they were to pay this debt to the nation's nautical defenders, they nevertheless were unwilling to go all-

out in doing so: To benefit from the care to be provided, the seamen and others who followed them along the trackless paths of the world's waters were required to contribute sixpence apiece a month. This contribution was not expected to be made voluntarily. It was withheld from each man's pay, much as Social Security taxes, Federal income taxes and other involuntary withholdings are made in our day. Later, merchant seamen were allowed to participate.

When the United States of America came into existence, it copied a great many of the customs and practices of the mother country from which it had just won its freedom. One of them was responsibility for the health of its merchant seamen and the officers and men of the Navy. From that responsibility sprang the U. S. Public Health and Marine Hospital Service. Protection of seamen's health was later taken over by other agencies, and this one became known simply as the U. S. Public Health Service.

Under both titles it has a long and distinguished history. Performing, broadly, for the nation as a whole the duties normally performed for individual states by their state departments of health, it has protected the country's civilian population—and, indirectly, its men and women in uniform—against disease of many kinds. Much of its work of course is done in close and friendly cooperation with official agencies at the state level. Funds it has made available have fought venereal disease, malaria and tuberculosis in Alabama on a scale impossible without that kind of financial assistance. And similar campaigns against these and other diseases have made life more certain and illness less terrifying in other states.

There are of course some fields in which the U. S. Public Health Service acts on its own. It is a medical officer of this agency who boards an incoming cargo ship or sleek transatlantic speedster to be sure that its passengers and crew will not bring in sparks from foreign epidemics to blaze into holocausts in an American city or quiet countryside. It is the U. S. Public Health Service which has erected a strong wall against deadly mosquitoes hiding in planes inbound from South and Central America. It is the U. S. Public Health Service that carries on exhaustive research into the causes and origins of man's traditional disease enemies—diseases like cancer, mental illness and poliomyelitis, to mention just these three.

Dr. Williams undertook a monumental task when he began writing this history of that huge and powerful agency. The story he had to tell is an interesting one. And he has told it well. The voluminous material is made readily accessible by means of an extensive index. Thus those who wish to read about unrelated episodes in the U. S. Public Health Service's history, as well as those who prefer to start at the beginning and keep going, may do so.

John M. Gibson.

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AMERICAN MEDICAL ASSOCIATION NEWS

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**REPORTS MODERN MEDICINE'S TRIUMPH  
OVER TUBERCULOSIS**

Developments in chemotherapy and major chest surgery and the use of antibiotics are the reasons for the remarkable changes in the treatment of pulmonary tuberculosis during the last 15 years, it was reported in the July 4 Journal of the American Medical Association.

"In a short period of time, these changes have altered the prognosis of tuberculosis by a phenomenal degree," according to Dr. William Weiss, Philadelphia. Dr. Weiss is associated with the department of chronic diseases of the chest, Philadelphia General Hospital, and the Woman's Medical College of Pennsylvania.

"Institutional atmosphere has been converted from hopeless resignation associated with the predominant purpose of segregation to one of encouragement associated with an aggressive therapeutic attack, particularly in general hospitals with large tuberculosis units," he added.

Dr. Weiss based his conclusions on a comparative study of the tuberculosis wards of the Philadelphia General Hospital in 1937 and 1952.

Results disclosed a change in the type of patient, from the younger to the older age groups. A great increase in the proportion of Negro women hospitalized, but no significant change in the proportion of Negro men was also shown. There was a large decrease in the number of white patients, both men and women.

"There has been a marked, over-all drop in the mortality rate since 1937," Dr. Weiss pointed out. "In that year, the mortality rate was highest in Negro patients and lowest in white women. The greatest drop in mortality has occurred in the Negro patients, especially the Negro women, and the least drop has occurred in white men.

"These changes are important in the evaluation of modern therapy. Negro patients used to have a much poorer prognosis than white patients; they now have a slightly better prognosis while under hospital care. The probable explanation for this is that acute exudative tuberculosis is more apt to develop in Negro patients, especially Negro

women, than in white patients, and it is this type of lesion that responds best to antimicrobial therapy.

"In retrospect, the rapid evolution of modern therapeutics for tuberculosis during the last six years or so has been almost dramatic. It should be noted that therapy is more aggressive today than it was 15 years ago. Although the turnover of patients in 1952 was less than half that of 1937, the number of major surgical procedures carried out in 1952 exceeded the number in 1937.

"In addition, at any one time in 1952, the percentage of hospitalized patients receiving antimicrobial therapy approached a maximum of 92 per cent. Since the percentage of patients receiving forms of treatment other than bed rest was relatively small (in 1937), it is reasonable to attribute most of the favorable results of modern treatment to antimicrobial drugs. In fact, the relative increase in major surgical procedures, particularly the development of pulmonary resection, has been possible only because of antimicrobials."

Profound change also has occurred in the clinical manifestations of tuberculosis and its complications since the introduction of effective antimicrobials, Dr. Weiss added. Today, when such drugs are given to a new patient, cough rapidly lessens so that narcotics are seldom used; toxicity, fever and night sweats soon disappear, and, in most cases, the patient begins to gain appetite, weight and strength. Distressing complications such as laryngitis and enteritis are almost nonexistent, and formerly fatal complications, such as miliary tuberculosis, meningitis and pericarditis, often respond to treatment.

The new trend in therapy has resulted in longer hospitalization, and the major effect of antimicrobial treatment has been a dramatic lowering of the mortality rate, Dr. Weiss stated. The percentage of deaths has dropped from 43 per cent in 1937 to 18.2 per cent in 1952. In 1937, only two per cent of the patients remained in the hospital for six months or more, as contrasted to 55 per cent in 1951; in 1937, no patients remained for 12 months or more, while 29 per cent did so in 1951.

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## SOME NEWER CONCEPTS IN THE TREATMENT OF UREMIA

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Of all serious medical problems that of uremia due to renal disease remains one of the more common, and it has always been, more or less, a therapeutic stumbling block. Part at least of the reason for the difficulty in arriving at successful therapy is that often vigorous treatment is neglected because the underlying disease process is considered to be a hopeless one.

The patient with uremia presents a disheartening problem therapeutically in that it often involves maintaining adequate caloric intake in the face of anorexia, nausea, and vomiting, and it also involves maintaining fluid and electrolyte balance in the face of nitrogen retention and acidosis because of severe kidney damage.

Physiologically speaking, as simply as possible, the problems in uremia are two: (1) Inability of the kidney to excrete the normal nitrogen load resulting from protein metabolism and normal tissue breakdown. The part of the load resulting from protein metabolism may be altered somewhat by restricting protein intake, as we shall see, but the manufacture of nitrogenous waste products as a result of tissue breakdown continues as long as the organism survives. The retention of nitrogen is reflected clinically in the low urinary output of nitrogen, and in the rising level of the blood urea nitrogen. Problem (2) involves the inability of the kidney to regulate electrolyte balance in the serum because of loss of many of its functions, all or in part. Among the more important functions damaged is the ability to

acidify the urine and thus conserve base. Two of the most important of these mechanisms are the ability to produce ammonia and the distal tubular mechanisms which bring about further acidification of the urine under normal conditions. The loss of these functions causes the loss of sodium, potassium, and calcium as base. The loss of potassium continues in addition through the mechanism of obligatory distal tubular excretion, independent of the serum level, as has been demonstrated by Berliner and others. The calcium loss increases as phosphates are retained, and may become so severe as to cause tetany.

A regimen, then, which is to meet with any degree of success must: (1) maintain caloric intake without contributing more than is absolutely necessary to nitrogen load, and (2) administer water and electrolyte so that there is optimum hydration and correction of acidosis.

To discuss the nutritional aspect of uremia first, and this is one of the more important, though probably the most generally ignored factor in the treatment of uremia: The studies of individuals on the "liferaft ration" by Gamble's group demonstrated that 100 grams of glucose a day were adequate to prevent starvation ketosis and that 50 grams a day were almost as effective, so that it should not be difficult, therefore, to prevent starvation ketosis from contributing any to the picture of uremic acidosis. Borst in 1946 showed that a diet containing almost no protein but enough carbohydrate and fat to cover caloric requirements could maintain a patient with chronic renal disease in nitrogen equilibrium as long as he could ex-

crete two to five grams of urea a day. Normal individuals on a normal diet excrete 20 to 25 grams of urea per day. Many of Kolff's patients on the Borst diet reduced their daily urea excretion to 2.5 grams or less a day. Bull, Jaekes and Lowe constructed a graph showing that on the Borst diet (which consists entirely of sugar, salt free butter, flour, water, and coffee extract) in the completely anuric patient the blood urea nitrogen would rise to around 200 mg. per cent in two weeks, whereas on a diet containing the usual amount of protein it would rise to 600 to 700 mg. per cent in the same period.

Such a diet is recommended, then, for the phase of acute nitrogen retention in uremia. The Borst regimen is also recommended in acute renal shutdown due to any cause. For the patient with chronic retention, Borst, Kolff, Kempner and others recommend a daily intake of 20 grams of protein, the rest of the caloric requirements being met by carbohydrates and fat, this diet to be maintained indefinitely. These authors and Neubauer have used this diet and have observed patients to gain weight and go into positive nitrogen balance while on it over a long period of time. Kempner, of course, has used the same thing in effect in his rice diet.

Our chief concern today, however, is with water and electrolyte balance in uremia, the treatment of uremic acidosis. It is generally agreed that in the treatment of uremic acidosis three of the more important objectives are: (1) correction of acidosis, (2) avoidance of over-hydration (pulmonary edema is often the cause of death during treatment), and it should be remembered also that some of these patients will be edematous before treatment is started, and (3) avoid hyperpotassemia. Most observers feel that alkali should be given, but how much and in what concentration have been and still are matters of great controversy. The usual therapy is conservative or prohibitive in the use of the sodium ion, particularly if the patient is anuric or is edematous. Nickel and his group demonstrated, however, that sodium, chloride, potassium, and water excretion are increased above normal relative to glomerular filtration in patients with renal insufficiency, and they observed, as have others, that this loss is not associated with any change in the serum level of sodium until very late if at all. The kidney, then, loses its ability to save base. Platt attributes this maintenance of sodium level

to (1) diminished blood volume and (2) to loss of intracellular sodium into the extracellular space. He states that patients with chronic renal disease ought to be allowed a liberal supply of salt. Nickel's group demonstrated that withholding sodium from patients with chronic renal disease produced a decrease in glomerular filtration rate with a fall in renal plasma flow. The result was a rise in level of blood urea nitrogen. This group demonstrated, as has Neubauer, that there is a deficit of intracellular sodium in renal insufficiency. This sodium deficit may be present even in the presence of edema.

By way of replacing the sodium deficit, Kolff has used up to 12 grams of sodium bicarbonate per day in patients in severe acidosis. It is obvious that to try to replace the sodium by giving an isotonic solution intravenously in the presence of damaged kidneys would result in over-hydration long before the sodium is replaced, and this, unfortunately, often happens. In 1948 Fox and McCune used hypertonic sodium lactate to replace the sodium lost in children with renal disease, many of whom were edematous, and with good results. More recently Neubauer has used hypertonic sodium lactate parenterally and orally and the 20 gram protein diet in patients with chronic renal disease. His reasons for using the lactate salt of sodium are twofold: (1) He feels that there is a relative excess of chloride in the uremic patient and that an excess of carbon dioxide (lactate being a carbon dioxide precursor) facilitates excretion of chloride. And (2) Berliner and others have shown that the lactate ion increases the TmP AH, indicating an increase in tubular function. He feels that some of these patients show total K deficit. Neubauer's best results have been in patients with chronic glomerulonephritis and chronic pyelonephritis. He has also had good results in treating the uremia accompanying polycystic kidneys. Poorest results have been in patients with uremia and malignant hypertension. These results are essentially the same as those being observed by a group working at Philadelphia General Hospital. The regimen is one which we are starting to use at the Medical College of Alabama, but our results are so far inadequate to make them worth reporting.

The principles of the regimen are: (1) Promotion of adequate urine flow and correction of electrolyte imbalance through the use of hypertonic repair solutions. (2) Reg-

ulation of fluid balance. During the period of an anuria or low output the fluid intake for 24 hours is restricted to 800 cc., plus the volume of the urinary output. It should be mentioned here that Neubauer in his series is not so careful as we are and as Kolff and others have been in the administration of fluid. Neubauer claims, however, that he has not produced pulmonary edema in any of his patients. (3) Adequate caloric intake. This involves giving Borst soup during the acute phase of nitrogen retention, gradually graduating to a 20 gram protein diet.

In comatose patients all therapy is intravenous. Frequent determinations of serum sodium, potassium, chloride, carbon dioxide, and blood urea nitrogen are done, and 24 hour urines are collected for balance studies. Neubauer observed marked increase in urinary electrolyte and nitrogen excretion with the urine changing from hypotonic towards isotonic without necessarily any marked change in urinary volume. In other words, by presenting more sodium to the tubules less work is demanded of them to conserve Na. He feels that, because an isotonic rather than hypotonic fluid is presented to the tubule, less work demand is placed on the tubules and therefore more efficient function results.

The daily caloric requirement is met by giving the comatose patients 10% Travert or 10% glucose in water. Calcium gluconate is also given 4 to 8 grams daily. Hypertonic sodium lactate is given by putting 120 to 200 cc. of a one molar sodium lactate solution with an equal amount of 5% dextrose in water and giving it over a period of two to three hours. If the patient is edematous. blood pressure should be checked frequently during the administration of the lactate and the solution stopped if signs of pulmonary edema appear. Potassium, as the acetate or chloride, is added to the solution if serum potassium is low or if the electrocardiogram shows signs of hypopotassemia.

The comatose patient, or the patient unable to take anything by mouth, then gets a total fluid intake for 24 hours of 800 cc., plus a volume equal to the urinary output. In this total fluid intake are included 10% sugar solution, calcium, and 120 to 200 cc. of a one molar sodium lactate solution. If the serum chloride level falls below 65 milliequivalents per liter, then 2% sodium chloride may be substituted for sodium lactate.

When the patient is able to take things

by mouth, Borst butter soup is given in frequent small amounts, and one molar lactate is given orally in doses of 160 to 200 cc. per day divided into 40 cc. doses. Calcium lactate powder is mixed with Amphojel, the latter to prevent phosphate absorption, and given in doses of from 4 to 8 grams per day. When urinary output rises above 1000 to 1500 cc. per day, fluids are given ad lib., and as the blood urea nitrogen drops protein is added to the diet up to 20 grams per day. The diet is kept salt free, and Neubauer maintains his patients on oral molar lactate with varying amounts of potassium acetate indefinitely, checking serum levels and the 24 hour urine output of these ions once a week. Should pulmonary edema or marked sudden weight gain occur at any time during the course of therapy the sodium lactate is continued but the dose is reduced along with the water intake.

It is to be emphasized that this method of treatment is in part still in a more or less experimental stage, hence the laboratory determinations, which are impractical in many instances, but the group at Philadelphia General and Neubauer's group feel very strongly that it shows great promise as a method of treating uremia at the present time.

In summary, then, the problems in the treatment of uremic acidosis in the acute or chronic forms are those of maintaining nutrition and maintaining fluid and electrolyte balance. It is felt that the low protein diet in the chronic phase, and the Borst regimen in the acute phase, are the most advisable forms of dietary therapy. There is evidence accumulating to show that the use of hypertonic repair solutions is the most effective means of lowering the blood urea nitrogen and restoring electrolyte balance to normal in patients with chronic or acute uremic acidosis.

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The conquest of tuberculosis in our country will be expedited by concentrating on those measures which have been most productive in the past decades. These are early case finding, prompt and adequate treatment, including the newer surgical procedures, and effective medical follow-up and rehabilitation of arrested cases. Vigorous efforts along these lines are absolutely essential not only for the welfare of those with the disease but also for the protection of those who might otherwise become infected. The detection and isolation of infectious cases are the most effective curbs to the spread of the disease. —Louis I. Dublin, *A 40-Year Campaign Against Tuberculosis*, Metropolitan Life Insurance Company, 1952.

## THE USE OF GONADAL STEROIDS IN GYNECOLOGY

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and

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Advances in the fields of biochemistry and physiology have revolutionized our concept of endocrine therapy. Hormones are now employed for their nonspecific pharmacologic properties as well as for their ability to substitute for specific deficiencies. This encompasses the treatment of nonendocrine conditions by means of endocrine substances, their administration being governed by their manifold influences on metabolism, both systemic and intracellular. Changes in our understanding of reproductive physiology have afforded better clinical comprehension of the gonadal steroids, estrogen, progesterone, and androgen. Although rational indications for their use have contracted measurably, much confusion still exists concerning dosage and the avoidance of undesirable side actions. They are particularly useful in the management of dysfunctional menstrual disorders. It seems proper to emphasize initially the manner in which such endocrine substances are to be employed by the gynecologist.

## PREREQUISITES TO GONADAL STEROID THERAPY

It is necessary to observe certain cardinal principles prior to the administration of any endocrine substance. It seems important to reemphasize at least three of these basic maxims, as follows:

1. *Selection of Patients.*—In planning treatment for patients with nonorganic disturbances of menstruation the physician should recall that such a disorder is often only a symptom of some underlying condition. Many factors must be considered in the medical management of such disorders, factors which may be local and organic, or constitutional and systemic, or of a specific endocrine character. However, in the presence of abnormal uterine bleeding, treatment of the symptom, excessive bleeding, may be necessary prior to pursuing the matter further. On the other hand, amenorrhea often requires no treatment.

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Read before the Association in annual session, Birmingham, April 17, 1953.

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Antecedent to the prescription of any endocrine product a complete survey of the whole patient must be made to exclude the presence of any condition which would preclude the use of the substance in question. The ordinary diagnostic procedures, including complete physical examination, blood count, urinalysis, serologic study, biologic tests for pregnancy, and determination of the basal metabolic rate should be employed as indicated. Of these, physical examination is paramount. For instance, it is an absolute necessity to examine the breasts and genital organs of any woman prior to allowing her to take estrogen.

In selecting patients for endocrine treatment it must be remembered that no two patients ever present precisely the same endocrinologic problem. This fact is clearly emphasized by the varied treatment accorded the same disorder—for example, uterine bleeding—at different ages. Moreover, the physician, appreciating the effects of emotion and nutrition, should offer advice relevant to better living habits and to the solution of unsolved social problems.

2. *Evaluation of the Menstrual Physiology.*—The effects upon the menstrual cycle by the hormones under discussion make it imperative for the physician to have some knowledge of the current concept of menstrual physiology presented herewith in the form of a brief review.

The menstrual cycle depends upon cyclic ovarian changes which are governed by the follicle-stimulating, luteinizing, and luteotrophic hormones of the anterior lobe of the hypophysis. These are responsible for maturation of follicles, ovulation, follicular atresia, luteinization, and maintenance of the corpus luteum. The recurring changes in the endometrium are, in turn, dependent on the ovarian hormones, estrogen and progesterone.

At the conclusion of a menstrual flow, responding to the presence of estrogen, the endometrium grows from a thin layer of cells practically devoid of glands to a tall, well vascularized glandular tissue. After the ripening of one follicle, in the midst of

a host of others destined to become atretic but temporarily producing estrogen, ovulation occurs during the midportion of the cycle. The proper ratio of follicle-stimulating and luteinizing gonadotrophins are probably responsible for its timely occurrence. At the site of ovulation the now empty follicle collapses and is transformed within a few days into a corpus luteum. Luteotrophic gonadotrophin now supports the corpus luteum, stimulating the production of both estrogen and progesterone for a limited time.

During the second half of the cycle progesterone causes the estrogen-primed endometrium to become a hyperemic, highly functional tissue, one richly endowed with nutritive substances necessary for the embedment and support of a fertilized ovum. If fertilization does not occur, the corpus luteum retrogresses because there is no trophoblastic luteotrophin. Within a few days thereafter, the endometrium, constructed solely to nourish an embryo, suffers from the withdrawal of the corpus luteum steroids, disintegrates, and is cast out by menstruation. If fertilization occurs the chorionic cells of the trophoblast produce chorionic gonadotrophin to support the corpus luteum.

**3. Application of Pharmacologic Principles.**—The testicular and ovarian hormones are steriods, a group which includes also the adrenocortical hormones. The gonadal steriods have been chemically identified, their structural formulas are known, they are available in pure crystalline forms, and are made synthetically. They are stable and will remain potent indefinitely without refrigeration. They may be administered intramuscularly, orally, and by absorption through skin or mucous membrane. Inasmuch as they contain no protein they do not usually give rise to allergic manifestations, but they are frequently dispensed in vegetable oils which have been known to evoke sensitization. They have the significant dual ability of acting both on the genital end-organs and, in a reciprocal manner, on the anterior lobe of the hypophysis. The latter propensity, especially true of estrogen, tends to disturb the rhythm of the menstrual cycle by either depressing the production of, or stimulating the sudden release of, hypophyseal gonadotrophins. Moreover, they are anabolic agents, encouraging the storage of protein and the retention of water.

## ESTROGEN

### *The Uses of Estrogen*

The physiologic attributes of estrogen make it clinically useful, whenever it is desired to achieve growth of all or part of the genital tract, to depress temporarily the function of the anterior lobe of the hypophysis, and to counteract an androgenic effect. In the first instance are included the treatment of atrophic vaginitis and the adjunctive therapy of amenorrhea; in the second, the suppression of lactation and the alleviation of the menopausal syndrome; and, in the third group, are the urologic uses of estrogen, which are not germane to this discussion.

**Atrophic Vaginitis.**—Postmenopausal vaginitis occurs because of the vulnerability of the atrophic vaginal mucosa to trauma and infection. The cessation of ovarian function, depriving the vagina of the trophic effect of estrogen, results in diminution of the layers of the epithelium, disappearance of the glycogen content of the cells, and loss of the protective vaginal flora. Deprived of these natural barriers to infection, the vagina becomes fertile soil for bacterial growth. The atrophy and subsequent infection give rise to the symptoms of irritating leukorrhea, introital paresthesia, and dyspareunia. *Trichomonas vaginalis* is a frequent secondary invader under such circumstances.

Since the absence of estrogen is the basic cause of this disorder, it is logical to administer it to restore the vaginal epithelium to its former height and state of resistance. The dosage of estrogen employed for this purpose should be small, inasmuch as the vaginal mucosa responds to small quantities. It may be given effectively orally as either 0.5 mg. of diethylstilbestrol or 0.625 mg. of estrone sulfate daily for several weeks. To avoid the risk of undesired uterine bleeding from such orally administered estrogen, it is perhaps best given intravaginally for this condition. The nightly introduction of a cream containing estrogen allows the use of smaller quantities of the hormone and is really more effective. However prescribed, the estrogen should be discontinued within a month and repeated only if required.

**Secondary Amenorrhea.**—The causes of secondary amenorrhea are so protean that intelligent therapy cannot be applied without a complete investigation of the constitutional background of each patient.

The objective of estrogen therapy in amenorrhea is either the demonstration that the endometrium is capable of response or the relief of uterine hypoplasia. If such atrophy—perhaps the sequel of a previously existing pituitary-ovarian deficiency—is the sole cause of the amenorrhea, fair results may be obtained from treatment with estrogen alone. In such women the endometrium is rebuilt to a point of normal responsiveness, and, in effect, the estrogen acts merely as the “starter” which sets the abeyant cycle in motion. Unfortunately, this applies to relatively few amenorrheal women.

In the treatment of amenorrhea, estrogen is more effective when it is administered with the corpus luteum hormone, progesterone. They may be given either together (a combined injection) or separately in consecutive manner. In the former method the amenorrheal patient may be given a combined intramuscular injection of 2.5 mg. of estradiol benzoate and 12.5 mg. of progesterone on two successive days. Using the consecutive style one may administer 1.5 mg. of estradiol benzoate intramuscularly every third day for five doses and follow immediately with five daily injections of 10 mg. of progesterone. Such dual therapy, combined or cyclic, should be repeated for three consecutive months.

When parenteral medication is to be avoided, estrogen and progesterone may be administered orally. A suitable schedule, for example, is the use of either 2 mg. of diethylstilbestrol or 0.5 mg. of ethinyl estradiol daily for fifteen days, followed by 80 mg. of pregnenolone, the “oral progestin,” daily for five days.

*The Postpartum Inhibition of Lactation.*—One of the most satisfactory uses of estrogen is the prevention of breast engorgement when it is desired to inhibit lactation in the puerperal woman. If the administration of estrogen is started within 24 hours of delivery, there is generally freedom from pain and engorgement, as well as a distinct depression of lactation. In fact, when suckling also is prohibited initially, lactation in the clinical sense rarely occurs. If the administration of estrogen is started after lactation has been established, relief from engorgement and subsidence of lactation are hastened but the effects are not dramatic.

The dosage of estrogen required to prevent puerperal breast engorgement is rela-

tively small. Intramuscular administration for this purpose is not required. Nor is it necessary to employ natural estrogens. As little as 1 mg. of diethylstilbestrol given orally three times daily for several days is adequate. The substance is then best withdrawn gradually by a reduction of one dose daily for several additional days. It is not necessary to administer the estrogen for more than one week.

The danger of administering estrogen during the puerperium is its propensity to create hyperplasia of the regenerating endometrium, which may result in withdrawal bleeding. This unwanted effect may be avoided by employing the small dose mentioned for a limited period and by discontinuing its use gradually.

*Menopausal Syndrome.*—Most women do not require treatment for the menopausal syndrome. In this majority group, the flushes, nocturnal sweats, and nervous instability are mild, easily mitigated by reassurance alone. A brief explanation of the recurrent nature of menopausal symptoms and of their tendency to disappear spontaneously after a variable time, coupled with the sympathetic prescription of a mild sedative, may be all that the patient requires. However, when the symptoms are troublesome, there is no more specific therapy than estrogen. The proper objective of estrogen therapy of the menopausal syndrome is to aid the patient's adjustment to the diminution and cessation of ovarian function. This logical aim is lost if the estrogen is not prescribed for measured periods and if there are not repeated attempts to withdraw the hormone entirely.

Orally administered estrogen is ideal for treatment of menopausal symptoms; rarely is there need for parenteral administration. The *smallest* oral dose required to assuage the vasomotor symptoms should be prescribed. Whether one employs a daily dose of 0.5 mg. of diethylstilbestrol, 0.625 mg. of estrone sulfate or 0.02 mg. of ethinyl estradiol is immaterial. The important rules are to prescribe the estrogen for a limited period and to withdraw it in a gradual manner. The most prevalent abuse in the usage of estrogen is the prescription of a routine daily dose to be taken more or less indefinitely. This often results, even in women in whom menstruation has long since ceased, in the occurrence of uterine bleeding. Such bleeding is most likely to follow sudden

withdrawal of administered estrogen. If estrogen evokes bleeding in a postmenopausal woman, she should avoid such therapy in the future.

Estrogen's unfortunate faculty of inducing uterine bleeding in the postmenopausal woman is indirectly responsible for many instances of neglected carcinoma of the uterus. The physician faced with postmenopausal bleeding may lapse into a false state of security, tending—without proper examination of the patient—to attribute the bleeding to previously administered estrogen. The natural and proper suspicion in all cases of postmenopausal uterine bleeding must be carcinoma of the uterus, and the attending physician should be impelled to inspect the cervix (executing a biopsy if indicated) and to perform diagnostic curettage.

That these admonitions are universally borne in mind is well illustrated by the recorded experience of many cancer clinics. In support of this we are privileged to cite illustrative statistics from the files of the Philadelphia Committee for the Study of Pelvic Cancer. From December 1945 to December 1946 this Committee uncovered 116 instances of unwarranted delay in the diagnosis of pelvic cancer. Of these 116 instances, 78 were classified as "physician delay" and the remaining 38 as "physician and patient delay." More significant, perhaps, is the disturbing fact that 31 of the 116 patients were given medication, oral or hypodermic, in the presence of symptoms suggestive of uterine cancer, without examination. Such a practice, particularly if the patient has abnormal uterine bleeding, is reprehensible and criminally negligent. That such neglect may stem directly from indiscriminate prescription of estrogen is illustrated by the following case histories:

*Case 1.* G. N., a white woman aged 41, had prolonged, though scanty, menstrual flow and menopausal vasomotor symptoms in January 1946. During February she bled intermittently for two weeks. She was advised by a physician in March—without benefit of pelvic examination—that she was "changing" and that she required "needles." The latter were given twice weekly for two months with relief of the vasomotor symptoms but not of the metrorrhagia. At that time, May 1946, the patient visited another physician who removed "a small growth from the mouth of the womb" and advised additional "injections." These were admin-

istered weekly until the end of June, when the patient experienced sudden vaginal hemorrhage. The final diagnosis was squamous cell carcinoma of the cervix, stage III.

*Case 2.* A. W., a Negro woman aged 50, had an episode of menorrhagia and summoned a physician who did not examine her but prescribed tablets "for the change of life." Menorrhagia was repeated the next month and was followed by intermittent metrorrhagia. Noting no relief after taking the prescribed medication for two months, the patient saw a second physician who examined her and recommended admission to the hospital. The diagnosis was advanced squamous cell carcinoma of the cervix.

These two histories are shocking examples of the glaring omission of pelvic examination and of the too facile prescription of estrogen. No further comment seems necessary to emphasize the importance of pelvic examination before prescribing estrogen. Frequently, however, mere pelvic examination is not sufficient. When a postmenopausal woman who has taken estrogen begins to bleed, one does not know whether the bleeding is estrogen evoked or caused by cancer. In this dilemma the physician may either wait expectantly, observing the effect of the complete withdrawal of estrogen, or he may perform an immediate diagnostic curettage. If he decides to wait, it is his duty to keep the patient under close observation in order that the curettage be done promptly should the bleeding continue.

#### *Contraindications to Estrogen*

There are several prevalent abuses in the clinical application of estrogen, some of which are potentially dangerous. In addition to failing to limit the duration of treatment with estrogen, some of us tend to overlook certain contraindications to its use. Estrogen therapy, we believe, should be avoided in the following circumstances.

*Premenopausal Menstrual Irregularity.*—Estrogens are ill advised in the treatment of the woman approaching the menopause who has vasomotor symptoms along with irregular menstruation. Under such circumstances estrogen may result in even more irregular bleeding. The danger of confusing estrogen-evoked bleeding with metrorrhagia of more serious origin is obvious. Estrogen therapy of the menopause should be reserved for the alleviation of vasomotor,

nervous, and arthritic symptoms in the woman who has ceased to menstruate.

*Residual Endometriosis.*—Estrogen is contraindicated in women who have castration symptoms after the removal of both ovaries because of endometriosis. Receded endometrial lesions may be reactivated by the administration of estrogen, the resulting symptoms depending entirely on the site of the resurgent tissue. The idea of Karnaky<sup>1</sup> that huge doses of stilbestrol are beneficial in the eradication of active pelvic endometriosis—a concept supported by the observation of Bickers<sup>2</sup>—has not yet been corroborated sufficiently to merit widespread application.

*Carcinoma Background.*—The impression that estrogen is carcinogenic, particularly in the breasts and uterus, arose from the induction of cancer in cancer-susceptible experimental animals. Even though it is generally agreed that estrogen per se is not carcinogenic, it cannot be denied that it is a stimulant to growth of the breasts and uterus, which are frequent sites of carcinoma in the female. The suspicion must be entertained that women of so-called “cancer families” have a potentially malignant substratum. If there is, then, a clearcut history of multiple instances of either mammary or uterine cancer in a patient’s family, it is safer not to administer estrogen to that patient. It is an obvious corollary that estrogen is also contraindicated if the patient herself is a salvaged survivor of malignancy.

*Palpable Benign Tumors.*—The mammary ducts and the connective tissue around them are stimulated to growth by estrogen. It should not, therefore, be administered—for any reason—to a patient who has, or who has recently had excised, a fibro-adenoma of the breast.

The presence of a palpable uterine myoma constitutes a similar contraindication to the use of estrogen, even though adverse effects upon such a tumor probably would require large doses of estrogen.

*Hepatic Insufficiency.*—The liver, through its inactivation of circulating estrogen, plays a dominant role in determining how much of the hormone is biologically free to effect changes in estrogen-stimulated end organs, such as the mammary glands. This is well

illustrated by the fact that gynecomastia and testicular atrophy may result from failure of a cirrhotic liver to metabolize estrogen properly, permitting the circulation of a too potent form. Although it cannot be shown that such untoward effects of improper estrogen metabolism occur in any but the most advanced instances of hepatic disease, it is conceivable that acute hepatitis may temporarily result in hepatic decompensation sufficient to cause failure of estrogen inactivation. Therefore, it seems wiser, at least until further investigation clarifies the problem, to avoid the use of estrogen in patients who have had hepatitis recently.

#### PROGESTERONE

Progesterone is used in the treatment of threatened and habitual abortion, in the management of some types of amenorrhea, and as a “stimulant” in anovulatory sterility. Narrower, perhaps less reliable, fields of application include premenstrual tension and certain painful conditions of the breast. Its usefulness in the first triad of applications may be summarized as follows.

*Threatened and Habitual Abortion.*—Progesterone, initially produced by the corpus luteum and later by the placenta, is essential for proper implantation of the fertilized ovum, as well as for the maintenance of healthy decidua throughout gestation. The time at which the placenta supersedes the corpus luteum in production of progesterone varies widely, thereby accounting for the inconstancy with which abortion occurs following excision of the corpus luteum during gestation.

The production and excretion of progesterone, as reflected by the urinary excretion of sodium pregnandiol glucuronide, is maintained during the first ten weeks of pregnancy at the same rate as in the second half of the menstrual cycle. From that time there is a gradual but steady increase in the excretion of pregnandiol until the third trimester when a plateau level is maintained, which varies from 60 to 105 mg. daily. An inadequate production of progesterone by the corpus luteum, as shown by a low pregnandiol excretion (less than 5 mg. per 24 hours), may not prevent embedment of the ovum, but it may inhibit its proper development and eventuate in abortion. Premature regression of the corpus luteum, occurring as a result of either luteotrophic failure or poor ovarian responsiveness, is

1. Karnaky, K. J.: South. M. J. 41: 1109, 1948.  
2. Bickers, W.: South. M. J. 42: 229, 1949.

probably one of the principal reasons for habitual abortion. However, such a deficiency of corpus luteum function cannot be demonstrated by means of pregnandiol assays in more than a third of patients threatening to abort.<sup>3</sup> The administration of progesterone is desirable whenever a deficiency in its production is implied by a low pregnandiol excretion. Unfortunately, facilities for assay are not always available. When this is the case, there is no harm in its use during the second half of the menstrual cycle in anticipation of pregnancy and during early pregnancy until the placenta assumes the function of the corpus luteum.

Progesterone may be administered either hypodermically or orally for its salutary effect on the decidua. The parenteral dose should be at least 25 mg. of progesterone every other day until quickening occurs, although as much as 100 mg. of progesterone daily has been termed a proper dose.<sup>4</sup> Bishop and his associates successfully employ the implantation of 150 mg. of progesterone in pellet form as prophylactic therapy in habitual abortion.<sup>5</sup> Recently, progesterone itself has been shown to be effective orally.<sup>6</sup>

The synthetic substance, pregnenolone (anhydro-hydroxyprogesterone), is closely related chemically to both progesterone and testosterone. It possesses, however, a high degree of progesterone-like activity, and a rather low degree of estrogenic and androgenic activity. It may be employed orally as a substitute for the hypodermic use of progesterone, the dose required being approximately 8 times the hypodermic dose.

*Secondary Amenorrhea.*—Progesterone may be employed in amenorrhea either in combination with estrogen, as described previously, or alone. In short-term or mild amenorrhea, wherein the patient suffers little lack of estrogen, the effects of progesterone alone are often noteworthy. Five consecutive daily injections of 10 mg. of progesterone may be sufficient to achieve uterine bleeding. Such treatment, as well as combined estrogen and progesterone injections, must be repeated several times at

monthly intervals to achieve restoration of menstrual rhythm. Uterine bleeding which follows administration of progesterone alone serves to vindicate both the uterus as a responsive organ and the ovaries as producing estrogen.

*Anovulatory Sterility.*—When the diagnosis of anovulatory menstruation is established in a barren woman, either by temperature graphs or by repeated endometrial biopsies, or by both, an endocrine etiology of the sterility may be assumed. There is no accepted therapy for this poorly understood entity. However, progesterone may be of distinct value when administered during the second half of several cycles in large doses. A proper schedule is 50 mg. of progesterone intramuscularly on the 14th, 16th, 18th, and 20th days of the cycle. Such a course of therapy is repeated for three successive months. Although by no means a panacea for all patients with anovulatory sterility, it occasionally evokes sufficient change in the endocrine mechanism to enable pregnancy to occur.

The usefulness of progesterone is enhanced by the fact that, even in large doses, it is less likely to cause untoward effects than any other hormonal preparation. In fact, there are—in great contrast to estrogen—no important contraindications to the use of progesterone.

#### ANDROGEN

The clinical place of androgen in the treatment of nonorganic menstrual disorders or related disturbances has not been clearly defined. Such clarification will continue to elude us until we possess some understanding of the role played by androgen in gynecic physiology. Even its more or less empiric usefulness is, moreover, distinctly limited by the masculinizing changes it tends to evoke. The latter are more likely in certain women; for example, those with a seborrhic type of skin may develop acne from the smallest doses of the hormone.

Androgen's therapeutic value stems from physiologic effects which modify the action of estrogen in the endometrium, myometrium, and breasts. The chief fields of androgen therapy include the temporary management of endometriosis, the control of certain mastopathies, and the management of selected instances of *thoroughly* studied menopausal menorrhagia.

*Endometriosis.*—Small doses of androgen administered orally in the form of methyl

3. Bender, S.: Brit. M. J. 1: 683, 1949.

4. Guterman, H. S., and Tulskey, Alex. S.: Am. J. Obst. & Gynec. 58: 495, 1949.

5. Bishop, P. M. F.; Richards, N. A., and Dole, R.: Brit. M. J. 2: 130, 1950.

6. Mulligan, Wm. J.; Horne, H. W., Jr., and Rock, J.: Fert. & Ster. 3: 328, 1952.

testosterone may be employed for palliation in endometriosis. A safe dose is 10 to 20 mg. daily, taken during the second half of the menstrual cycle and repeated for several consecutive cycles. Such oral androgen effectively controls pain during the time it is administered, but it is by no means a complete treatment for the disorder. It is particularly applicable to patients proved surgically to have endometriosis, in whom it is desired to maintain continued function of the ovary and to achieve repeated temporary respite from pain. It is especially valuable in the management of endometriosis in women of childbearing age who desire to continue their fertility. Curiously, it does not appear to prevent pregnancy.

**Premenstrual Mastalgia.**—It is admittedly difficult to select patients properly for treatment of severe, cyclic mammary pain. The predominant psychogenic element in many and the frequent spontaneous remissions in others reduce the validity of any therapeutic claim. There is, on the other hand, no objection to planned, periodic courses of orally administered androgen for the temporary relief of pain. Employing methyl testosterone in a daily dose of 30 mg. during the two weeks preceding menstruation, the authors find it effective in preventing mastodynia. Since the precise cause of the pain is unknown and not removed, the condition generally recurs within several months of the withdrawal of the hormone. As in the androgenic treatment of endometriosis with methyl testosterone rarely do untoward effects occur with this dosage.

The type of mastalgia under discussion is that characterized by premenstrual pain and swelling *without discernible organic change*. Diffuse induration of the periphery of both breasts may be palpated premenstrually, regressing during menstruation. Such breasts may be the seat of adenomas, benign or malignant, the finding of which—despite the cyclic mastodynia—requires immediate excision and histologic study.

**Premenopausal Menorrhagia.**—The conservative management of excessive flowing during the premenopausal years is based on the concept that the menopause will shortly be curative. The objectives are to exclude the presence of organic disease and to obtain temporary control of the menorrhagia. Uterine curettage, in addition to its diagnostic value, is curative in about a third of the patients. All of the tissue obtained by cu-

rettage should be subjected to histologic study. This not only affords peace of mind concerning carcinoma but also uncovers the type of endometrial change. The persistence of hyperplasia during the later years of the premenopause contraindicates the use of estrogen.

Androgen is eminently suited to the temporary treatment of premenopausal menorrhagia *when it has been shown by curettage to be nonorganic in origin*. If the patient may be brought safely through a brief period to the menopause by means of androgenic therapy, thereby avoiding the hazards of intracavitary radium application or hysterectomy, it has value. The oral administration of methyl testosterone in a daily dose of 30 mg. during the week preceding menstruation is usually adequate.

Androgen has, therefore, limited usefulness in premenopausal menorrhagia; it has no place in the management of dysfunctional uterine bleeding at an earlier age, and certainly is not suited to the treatment of postmenopausal metrorrhagia.

#### SUMMARY

The current usage of the gonadal steroids in gynecology has been reviewed.

The widespread clinical application of estrogen is justified on the basis of its physiologic abilities, namely, to cause growth of genital organs, to depress hypophyseal function, and to counteract androgenic effects. The value of estrogen in atrophic vaginitis, secondary amenorrhea, postpartum control of unwanted breast engorgement, and menopausal syndrome was outlined. Several contraindications to the use of estrogen were emphasized.

The usefulness of progesterone was discussed in threatened and habitual abortion, secondary amenorrhea, and anovulatory sterility. No specific contraindications to its clinical applications are recognized.

The place of androgen in gynecology is limited because of lack of knowledge of its role in gynecic physiology and because of its disturbing faculty to virilize. It was described as having some value in the temporary management of proved endometriosis, nonorganic mastodynia, and occasional instances of functional premenopausal menorrhagia.

## TRANSMISSION OF VIRAL HEPATITIS BY DENTAL PROCEDURES

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This report was prompted by the apparently unusual transmission of viral hepatitis to a patient treated by a dentist during the anicteric phase of his illness. This is the same dentist listed by Trumbull and Greiner<sup>1</sup> in their article regarding homologous serum jaundice as an occupational hazard to medical personnel. A dentist administering treatment in the Kennedy Veterans Hospital, Memphis, Tennessee, developed viral hepatitis. On the day prior to his discharge, a patient who received care by him sixty-four days earlier was admitted because of viral hepatitis. This circumstance implied that viral hepatitis was transmitted to a patient by a dentist with the disease in spite of the fact that all needles, syringes and dental surgical instruments were autoclaved. The problem was studied with the following objectives: first, to determine any case of viral hepatitis which may have been a source of infection for the dentist; second, to find any additional case which may have occurred following dental care by him; and third, to determine the incidence of viral hepatitis occurring one to six months following dental treatment in all patients admitted to Kennedy Hospital with the disease from 1946 until January 1, 1953. Articles in the German literature by Nocke<sup>2</sup> and Sauerwein<sup>3</sup> were the only two which could

be found dealing specifically with this problem. Because of the scarcity of reports, these cases were deemed worthy of presentation.

The two cases are reported as follows:

*Case 1.*—A white male dentist, aged 44 years, was admitted on February 24, 1949 because of nausea, malaise, and dark urine of 10 days duration, and jaundice for the past 24 hours. There was no history of exposure to viral hepatitis. Physical examination revealed icterus of the sclerae and skin but the liver was not palpable. Liver function studies revealed serum bilirubin 7.2 mg. per cent, bromsulfalein 20 per cent retention 45 minutes after intravenous injection of 5 mg. of the dye per kilo body weight, and cephalin flocculation 3 plus at 24 hours and 48 hours. The patient received strict bed rest, with diet of carbohydrate 350 grams, protein 150 grams, and fat 100 grams, followed by an uneventful recovery and discharge on April 29, 1949.

*Case 2.*—A white male, aged 40 years, was admitted on April 28, 1949 because of anorexia, malaise, and dark urine of one week duration, and jaundice for the past 24 hours. Fifty-six days prior to onset of symptoms he received dental extractions by case one who was hospitalized for viral hepatitis before the course of extractions had been completed. At this time he received penicillin injections for an abscess of the gum. All needles, syringes and dental surgical instruments were autoclaved. Because of an eczematoid dermatitis of his hands, the dentist wore autoclaved rubber gloves. There was an icterus of the sclerae and skin, and the liver was palpable 4 cm. inferior to the right costal margin and tender. Liver function studies revealed serum bilirubin 6.0 mg. per cent, cephalin flocculation 2 plus at 24 hours and 3 plus at 48 hours, bromsulfalein 60 per cent retention 45 minutes after intravenous injection of 5 mg. of the dye per kilo body

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Read before the Association in annual session, Birmingham, April 16, 1953.

From the Infectious Disease Section, Medical Service, Veterans Administration Medical Teaching Group Hospital (Kennedy), Memphis, Tenn.

1. Trumbull, M. L., and Greiner, D. J.: Homologous Serum Jaundice; an Occupational Hazard to Medical Personnel, *J. A. M. A.* 145: 965-967 (Mar. 31) 1951.

2. Nocke, E.: Dental Syringes and Their Sterilization, with Special Reference to Homologous Serum Hepatitis, *Zahnärztl. Rdsch.*, 60: 15-16 (Aug.) 1951.

3. Sauerwein, E.: Infectious Hepatitis and Dental Treatments, *Deutsche Zahnärztliche Zeitschrift*, 6: 1306-13 (Dec. 1) 1951.

weight and thymol turbidity<sup>1</sup> 1.4 cc. barium sulphate. Oral cholecystogram was within normal limits. The patient received strict bed rest, methionine, crude liver extract, and a mechanical diet of carbohydrate 350 grams, protein 150 grams, and fat 100 grams but, in spite of this, the illness progressed in severity, necessitating that protein hydrolysate be given intravenously for several days beginning on the twentieth hospital day. After one week there was progressive improvement until discharge on July 11, 1949.

Symptoms consistent with viral hepatitis began fifty-six days following extraction of teeth by a dentist with viral hepatitis.

An attempt was made to determine any case of viral hepatitis which may have been a source of infection for the dentist or any additional cases which may have occurred following dental care by him. Records were obtained for all cases treated during the two-month interval prior to his admission to the hospital on February 24, 1949, totaling 208 cases. The average incubation period for homologous serum jaundice is eighty to one hundred and twenty days according to Capps.<sup>5</sup> Two months were assumed to be the minimal incubation period for the dentist, provided his illness was homologous

serum jaundice. There was only one case which appeared to be a possible source of infection for the dentist. A description of this case is as follows:

A colored male, aged fifty-six years, was admitted on November 21, 1948 for treatment of hypertensive cardiovascular disease. Digitalization was followed by nausea which persisted even though digitalis was discontinued. Reevaluation on the thirty-eighth hospital day suggested disease of the liver, which was confirmed by liver function studies revealing bromsulfalein retention fifteen per cent forty-five minutes after intravenous injection of 5 mg. of the dye per kilo body weight, and the prompt favorable response on receiving strict bed rest, with a diet of carbohydrate 350 grams, protein 150 grams, and fat 100 grams. Extraction of twenty-six teeth by case 1 was done, requiring a total of six visits during the period December 3, 1948 through December 27, 1948. In the absence of a liver biopsy, the type of liver disease could not be established definitely. The differential diagnosis was between viral hepatitis and cirrhosis of the liver secondary to congestive heart failure.

Symptoms consistent with viral hepatitis in the dentist began from seventy-three to forty-nine days following extraction of this patient's teeth. In addition to this case thirty-four patients were available to receive liver function studies between June 2, 1949 and July 13, 1949, which consisted of serum bilirubin and thymol turbidity.<sup>4</sup> With the

4. Shank, R. E., and Hoagland, C. L.: A Modified Method for the Quantitative Determination of the Thymol Turbidity Reaction of Serum, *J. Biol. Chem.* 162: 133 (Jan. and Mar.) 1946.  
5. Capps, R. B.: *Principles of Internal Medicine*, p. 1081-1085, reprinted 1952.

VIRAL HEPATITIS FOLLOWING CARE BY DENTIST WITH VIRAL HEPATITIS

	No.	Period of Time Treated	Highest Serum Bilirubin 1.0 mg. %	Highest (2) Thymol Turbidity 1.0 cc.	BSP Over 5% Retention	Time Hospitalized
All Cases	208	12/24/48 to 2/23/49	-----	-----	-----	None
Cases Receiving Lab. Tests	34	6/2/49 to 7/13/49	2	3	-----	None
Cases Ill With Hepatitis	2	Case 3 1/18/49 to 1/24/49	Case 3 17.0	Case 3 1.5	Case 3 60%	Case 3 4/21/49 to 7/11/49
		Case 1 12/3/48 to 12/27/48	Case 1 1.0	Case 1 0.6	Case 1 15%	Case 1 11/21/48 to 1/25/49

Dentist was ill from February 17, 1949 to April 29, 1949. Case 1 was treated on five different occasions, receiving complete dental extractions forty-nine days before onset of viral hepatitis of the dentist (case 2). Case 3 developed viral hepatitis fifty-six days following extraction of teeth by case 2.

exception of case two, none of the dental patients developed the clinical picture of viral hepatitis, although in one case the serum bilirubin was 1.2 mg. per cent with thymol turbidity<sup>1</sup> 1.2 cc. barium sulphate, and in another case the serum bilirubin was 1.7 mg. per cent with thymol turbidity<sup>1</sup> 2.1 cc. barium sulphate, with repeat 2 days later being 1.4 cc. barium sulphate. (Refer to the table.)

These cases prompted an investigation regarding the incidence of viral hepatitis occurring 1 to 6 months following dental treatment. The Kennedy Hospital became a Veterans Administration facility in 1946. Records of a total of 203 cases of viral hepatitis were reviewed covering the period from 1946 until January 1, 1953. Three cases were found in which the extraction of teeth by a dentist apparently was the mode of transmission. Symptoms consistent with viral hepatitis in the three cases began from 26 to 120 days following dental treatment. Unfortunately in no case were we able to determine the method of sterilization of the instruments.

#### DISCUSSION

Apparently dental care as a mode of transmission of viral hepatitis has been given little attention. The purpose of this report is to arouse interest in the problem and to focus attention on the disease as a hazard to both dentist and patient. The presence of four cases of viral hepatitis with dental care as the probable mode of transmission out of a series of two hundred and three cases, with an incidence of 2 per cent, indicates that, although such occurrences are unusual, they are not rare. The fact that only one known case of viral hepatitis occurred out of two hundred and eight patients treated by the dentist during the two-month period prior to his admission to the hospital would appear to indicate that the likelihood of a dentist with the disease transmitting it to a patient is small. The presence of eczematoid dermatitis of the dentist's hands was the probable reason transmission of the disease occurred in spite of wearing autoclaved rubber gloves. The following precautions are recommended to be taken in the practice of dentistry.

1. Autoclave all syringes, needles, and dental surgical instruments.
2. Wear autoclaved rubber gloves for each case.

The problem of establishing the diagnosis of viral hepatitis and its mode of transmission in any single case is well known. In view of the clinical course, the laboratory findings, and the incubation period varying from twenty-six to one hundred and twenty days, the diagnosis of viral hepatitis and its mode of transmission appear reasonably certain in the cases presented.

#### SUMMARY

1. An instance is reported of the apparently unusual occurrence of viral hepatitis in a patient treated by a dentist during the anicteric phase of his illness.
2. Only one known case of viral hepatitis occurred out of two hundred and eight cases treated by the dentist during the two-month period prior to his admission to the hospital.
3. A review of two hundred and three cases of viral hepatitis treated in the Kennedy Hospital from 1946 to January 1, 1953 revealed four cases, with an incidence of 2 per cent, having dental care as the probable mode of transmission.
4. Certain precautions are recommended to prevent the transmission of viral hepatitis in the practice of dentistry.

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**Therapy of Throat Conditions**—Throat medication has always been popular among laymen. The accessibility of the pharynx lends itself to local application and swabbing. From time immemorial various gargles have been used and it is remarkable how much faith the average person has in this form of treatment. The claims of some drug companies that their particular gargle kills certain pathogenic bacteria in a few seconds might be true in the test tube but in the mouth or throat this is impossible. Paints or gargles are washed away so quickly that it is hard to imagine any beneficial result. To be effective strong antiseptics would be required and with these, of course, there is always the danger of injuring the pharyngeal mucosa. Besides, in the act of gargling with the head thrown back, it is necessary for the posterior part of the tongue to approximate the soft palate to prevent fluid from entering the larynx.

The futility of this can easily be seen by using a dye and noting the stained area or having a patient gargle with iodized oil under the fluoroscope and viewing him from the side. The dye or oil does not reach beyond the third molar tooth or the anterior pillar of the tonsil. Painting the tonsils or pharynx is of little use although the cauterizing effect of silver nitrate at times seems to give some benefit.—*Tremble, J. Louisiana State M. Soc., June '53.*

## DESMOID TUMOR AND FIBROSARCOMA

B. F. THOMAS, JR., M. D.

Auburn, Alabama

This is a short report of two cases:

1. A desmoid tumor.
2. A fibrosarcoma of low grade malignancy.

(1) In June 1948, a 28 year old gravida II, para II, was seen with a chief complaint of a mass in the abdomen noted within the past week. When examined a small hard mass 5 cm. in diameter was found apparently lying within the rectus muscle. The CBC was as follows: Hgb. 85%, RBC 4,310,000, WBC 9,650, lymphs. 29%, polys. 61%, eosinophils 10%. On July 27, 1948, this mass was removed under general anesthesia. The layers of the rectus sheath were then brought together with interrupted silk sutures. This mass apparently came from the rectus sheath. The pathologic report as given by Dr. Joe Cunningham of Birmingham was as follows:

**Gross Description:** The specimen consists of a mass 5 cm. in length, 2.5 cm. in width, 2 cm. in depth. This is received fixed in Bouin's solution. This, on section, shows a white-and-yellow central core which is closely textured, and there seems to be an outer sharply defined membrane.

**Microscopic Description:** Section through the specimen shows striated muscle at both ends. In the middle of the specimen this striated muscle has been largely replaced by proliferating fibroblasts. These are rather tightly packed, are producing fibrils, are uniform in their size, shape, and staining reaction, and show very few mitotic figures. It is interesting that on the periphery of the specimen occasional masses of degenerating muscle can be found, with the myolemma still intact and with a heavy concentration of nuclei resembling in many respects giant cells. These, however, represent—as is seen by their staining reaction—muscle bundles. There is no evidence in the specimen of any malignant features.

**Diagnosis:** Desmoid tumor of the rectus muscle.

N. B. This tumor is completely benign. I suspect that there was a rupture of the rectus muscle during some previous pregnancy, with the consequent fibrous replacement.

(2) In December 1952, a 30 year old gravida I, para I was seen with a small hard mass

3 cm. in diameter which apparently was in the abdominal wall in the right inguinal region. The CBC was as follows: Hgb. 72%, RBC 3,920,000, WBC 9,600, polys. 48, lymphs. 42, eosinophils 10. On Dec. 20, 1952, this mass was excised under general anesthesia. It apparently was from the rectus fascia. The pathologic report given by Dr. Warren Matthews, Atlanta, Ga., is as follows:

**Gross:** A mass of tissue 3 x 2 x 0.6 cm. is submitted for study. The surface is somewhat ragged and grayish tan. Surfaces made by cutting show a homogeneously pale surface. The tissue is quite tough. In the center of the specimen there is a very small 2 mm. cyst.

**Microscopic:** The tissue consists chiefly of a neoplastic mass made of large spindle cells. These have oval, large, dark nuclei that vary much in size and shape. The nuclei are vesicular. Some of them have nucleoli. A few mitoses are present. Some cells have several nuclei. In addition, there are a few collections of foreign bodied multinucleated giant cells. Along one edge there is a small amount of smooth muscle with arrangement something like that of a tubular structure like intestinal wall. At the edges the neoplasm is seen invading striated muscle also. From the sections one cannot be sure whether or not all the mass was removed.

This is a mesodermal tumor probably arising from fascia. It is of low grade malignancy, with a tendency to recur locally before this invasion occurs. It is not radiation sensitive.

**Diagnosis:** Low grade fibrosarcoma.

The similarity of these two cases prompted me to report them. It is interesting to note that each patient had a 10% eosinophilia.

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Perhaps the most important factor in incidence among hospital personnel is the undiagnosed case of tuberculosis. The only way to prevent contact with such sources is to discover these unsuspected cases earlier. . . . It is suggested that the best means of offering this protection to medical personnel is to make routine chest films of every patient admitted to a hospital.—W. A. Abruzzi, Jr., M. D., and R. J. Hummel, M. D., *New England J. Med.*, April 23, 1953.

PEDIATRIC CASE REPORTS

Edited by

AMOS C. GIPSON, M. D.

Gadsden, Alabama

Case presented by

Benjamin P. Clark, M. D.

This baby, T. D., age 2 weeks, had had some vomiting and frequent stools since birth but was doing fairly well until about one week of age at which time it was noted that he was developing jaundice. Three days before admission to the hospital he was given an injection of penicillin which produced a large hematoma which had continued to bleed. At the same time, the umbilicus started to bleed and the foreskin, which had been dilated, began to ooze blood. During these last three days prior to admission the bleeding continued from these three sites, and the jaundice deepened.

Hemogram on admission:

Hemoglobin .....	12 grams
RBC .....	3.77 million
WBC .....	14,000
Lymphocytes .....	49%
Polys. ....	42%
Eosinophils .....	7%
Basophils .....	1%

He was given Synkamine 1 cc. every 4 hours for the first 24 hours and then three times daily for another 24 hours. The bleeding stopped after the second injection of this drug. However, the jaundice continued to deepen, the stools became clay colored, pasty and putty-like. The urine was highly colored. It was felt at this time that we were dealing with some congenital defect of the biliary system.

The child was discharged and returned to the hospital at the age of 12 weeks, at which time an exploratory laparotomy was done by Dr. J. O. Morgan. The final diagnosis was congenital absence of the gallbladder and bile ducts. Nothing could be done to relieve the condition.

It was noted at the operation that cirrhosis of the liver was well advanced, pointing out the necessity of early surgery in these cases. About 20% of these cases can be corrected surgically and these should be operated on before irreversible changes in the liver have taken place. There is no method of determining, prior to surgery, the cases which can be benefited by surgery, so all should be explored.

**Infectious Eczematoid Dermatitis**—The first step in the management of a patient with infectious eczematoid dermatitis is not therapy but investigation. This requires a thorough history, a thorough physical examination, and such routine laboratory tests as blood count, urinalysis, patch tests, examination of scrapings, and cultures. Other tests depend upon the findings in the individual case and the results of the routine examination and laboratory study. The investigation is often tedious and prolonged, as would be expected in a condition in which the etiology is nonspecific and in which the identification of one etiologic factor does not warrant the conclusion that it is the only factor, or the most important factor, responsible for the disorder.

One thing the dermatologist must always bear in mind in studying and treating infectious eczematoid dermatitis: it is the exceptional patient who has not already been subjected to long courses of treatment, often complicated, often radical, and all too often without apparent rationale. As a result, the clinical picture has often been altered because the patient has been sensitized to the medication employed and has become intolerant to it.

If infectious eczematoid dermatitis is seen in the acute stage, compresses soaked with water or watery solutions are contraindicated. They further macerate an already injured epidermis and thus favor the additional absorption of the epidermal antigens presumably responsible for the origin and persistence of the condition. The single exception to this rule arises from the necessity of removing crusted and infected material over the affected areas. Even then, compresses must be used with the greatest care, as open dressings, at room temperature, for not more than five minutes at a time, and not oftener than twice daily. They must be discontinued as soon as their purpose is accomplished. Finally, if their use seems to aggravate the eczema, or if there is any doubt of their value, they should be discontinued at once.

Probably the most valuable therapeutic agent now available in acute infectious eczematoid dermatitis is Lassar's zinc paste, preferably the plain variety, which contains starch, zinc oxide and petrolatum. Most patients tolerate it well. It is cooling, it relieves itching, and it has the great advantage that it absorbs fluids, being able to pick up twice its weight in water.

The paste is applied once or twice daily, depending upon the requirements of the special case. The patient is shown how to apply it, with a tongue depressor, in thin coats, on a gauze dressing, which is laid over the affected area and held in place with a loosely applied bandage. When the dressing is changed, the residual paste is left in situ over the affected area, no attempt being made to remove it either by the patient or the physician. Attempts at cleansing may thwart the effort to effect a cure.—Kennedy et al., *South. M. J.*, July '53.

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THE DOCTOR DRAFT LAW

On June 29 President Eisenhower signed the law extending and amending the Doctor Draft Act. It is identified as Public Law 84, 83rd Congress. In this Special Report we have made every effort to include all essential information on the provisions, new and old, which will be in effect through June 30, 1955, and our statements have been checked with government officials most intimately connected with operations of the doctor draft law. It is suggested that you save this report for reference use during the next two years. The American Medical Association already has stated that it will oppose any further extension of the doctor draft. While the law sets up a schedule of obligated duty based on prior service, it should be remembered that there is almost no chance of priority 4 men being called during the two years, barring a general war or other national emergency.

WHO MUST REGISTER UNDER THE  
DOCTOR DRAFT LAW?

All physicians, dentists and veterinarians not members of an armed service reserve component and under 50 years of age must be registered with their local draft board. They remain liable for induction up to age 51. Men on graduating from medical school have 10 days to register and ask for deferment for a year to complete internships. A physician must register under the doctor draft even though he has previously registered for the regular draft.

HOW MUCH SERVICE IS REQUIRED  
UNDER THE LAW?

Maximum service under the doctor draft is 24 months, which is required of all physicians who have had less than nine months of prior active duty. Graduated periods of service are provided for others as follows: 21 months if prior duty ranges between nine and 12 months, 18 months if prior duty ranges between 12 and 15 months, and 15 months if prior duty totals 15 or more months. The foregoing is applicable to reservists as well as registrants under the act.

In addition, priority 2 doctors with 17 or more months' service prior to entry on current duty are classified in priority 4, and no doctor with 21 months' prior service can be called during the life of the present act, except in time of war or national emergency declared by Congress. The law also requires release within 90 days of all men on active duty who would not have been called had



the new law been in effect, but they must apply for release.

WHAT CHANGES ARE MADE IN THE PRIORITIES?

The new law continues the four priorities, but effects two changes of importance: (A) It lowers from 21 to 17 months the amount of active duty required to move a man from priority 2 to priority 4. (B) It credits all active duty of any nature subsequent to September 16, 1940, except as noted in next question (the old law credited only service performed subsequent to receipt of professional degree).

(Priority 1 doctors are those who either received all or part of their professional education at government expense or received educational deferments in World War II, and who served less than 90 days on active duty. Priority 2 are those similarly educated or deferred, but who served between 90 days and 17 months—21 months under the old law. Priority 3 are men with no military service. All others make up priority 4. Priorities 1, 2, and 3 will be called before priority 4.)

WHAT IS THE DEFINITION OF PRIOR ACTIVE DUTY?

The law defines active duty as time spent either as enlisted man or officer since September 16, 1940 on (1) active duty in Army, Navy, Air Force, Marine Corps, Coast Guard, and U. S. Public Health Service, (2) non-military duty prescribed for conscientious objectors, (3) wartime military service with any World War II ally of the United States, and (4) service with the Panama Canal Health Department during World War II.

Not counted as active duty is time spent under military auspices in (1) ASTP, V-12 or similar training programs, (2) intern, residence or other postgraduate training, (3) senior student programs prior to receipt of the appropriate degree, (4) active service performed for sole purpose of undergoing a physical examination, and (5) active duty for training entered into subsequent to enactment of the law.

WHO IS ELIGIBLE FOR DEFERMENT?

Local boards, advised by state or local medical advisory committees to Selective Service, may defer doctors for (1) essentiality to the community, (2) extreme personal hardship, (3) certain teaching posts in medical schools, and (4) essential laboratory and clinical research.

DOES LAW PROVIDE FOR CONTINUING EQUALIZATION PAY?

The \$100-a-month equalization pay is continued for all commissioned physicians and dentists (except interns) while on active duty and is extended to veterinarians.

IS IT POSSIBLE TO RESIGN COMMISSION?

Physicians obligated only under the doctor draft are discharged from their commissions on completion of active duty performed in carrying out doctor draft obligations, retroactive to cover all who have served a year or more since September 9, 1950 (enactment of original doctor draft law). Reservists who would be liable for doctor draft except for their membership in a reserve component may resign their commissions upon completion of the period of obligated service. However, permissive resignation is not extended to those who are obligated by law or contract to serve on active military duty or in training in a reserve component.

ARE ALIENS ELIGIBLE FOR A COMMISSION?

A registrant under doctor draft no longer is held ineligible for appointment as an officer on sole ground he is not a citizen of the U. S. or has not made a declaration of intent to become a citizen.

HOW IS DUTY IN U. S. PUBLIC HEALTH SERVICE CREDITED?

Full credit is given for service in the commissioned corps of U. S. Public Health Service. PHS, unlike the military, may not hold a man against his will. Consequently, under the old law it would be possible for a doctor to serve in PHS for a few days, then resign and give up his commission, and move to priority 4. To forestall this, the new law requires that the Surgeon General of PHS approve termination of a commission if the time served is to be credited under the doctor draft law.

OTHER POINTS

Since the doctor draft law is part of the Selective Service Act, men covered by the law are subject to Selective Service System up to the time they accept commissions. . . . The law, as it affects doctors in service, is administered under regulations laid down by the three armed forces, within the limitations of the law. . . . Selective Service has nothing to do with determining the commission or promotion to which a doctor is entitled; this is the province of the three serv-

ices, which are required by law to grant commissions "commensurate with professional education, experience or ability." . . . Time spent in PHS internships and residen-

cy training programs, like military programs, is not credited as active duty.—*A Release of the Washington Office of the American Medical Association, June 29, 1953.*

## THE ASSOCIATION FORUM

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

### YOU, TOO

W. A. Dozier, Jr.

Director of Public Relations

It has often been said that the most one-sided person imaginable is a theatre person. He has one interest, one topic of conversation, and one line of thought. Often such a criticism is true. On occasion, however, some people have claimed that the questionable honor of this position belongs to a medical man. And in some instances this is true.

It is indeed fine to be devoted to a life of service, but is that enough? Should not those who have the innate ability, the education, and the experience use their faculties for an ever increasing number of problems—up to, of course, the saturation point? Should not one for his own good and the good of society as a whole devote some thought and energy to matters outside the confines of his own practice?

What are we getting at here? Just this. For some years the medical profession, by and large, practiced medicine. Little or no thought was given to politics, government, or statesmanship. The day of harvest came when the profession found itself faced with the pressing possibility of socialized medicine. Action was more than indicated; it was imperative. The outcome was a militant profession that was able to state its case, secure support, and arrest, at least temporarily, the dagger at its back.

Up to this point everything was fine; but as soon as the monkey was on someone else's back, evidences of slackening up became apparent. The job was only partially done. In fact a good start was hardly made. Some of the most difficult problems had not even been touched—have not been yet. The bad part is that when these problems are mentioned, a pat answer is too often given—"That is outside our realm." Here and now let us make answer to that. A glib way of stating it is simply, "Is it?"

Let us take an example. Just recently the federal government announced more than a nine billion dollar deficit for last year. How many really gave any consideration to just what that means to himself and our society? Oh, yes, we will all speak out, and loudly, for lower taxes; but that is not what is needed from you. Have you looked into the matter far enough to get at the real basis for the problem? Why is it that almost every day you hear someone say he is making more in dollars than he ever did but still can't make ends meet? Why does your money buy so little? In other words, what does the government's fiscal policy do to you and to society?

Don't just shrug your shoulders and say that is high finance. You, along with other well-educated people, must turn your minds to this many-faceted problem. One does not expect a person who did not finish high school to comprehend too readily the problems herein, but one can expect a professional man to do so. No part of life can escape the matter of economics, and in the final analysis the reckoning must come. The medical profession along with other leaders must help direct us in the proper ways. If a man will not do it for the good of society, he had better do it for his own benefit. You, too, must take a part in this fight; for you, too, will certainly be touched by it all. You cannot remain unsullied.

1954 MEETING  
OF THE ASSOCIATION  
ADMIRAL SEMMES HOTEL  
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APRIL 15-17

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## STATE DEPARTMENT OF HEALTH

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### BUREAU OF ADMINISTRATION

D. G. Gill, M. D.

State Health Officer

#### HARDENING OF THE ARTERIES

A certain elderly lady had been ailing for some time. However, she insisted that she was not really sick. Only taking several years off her age would cure what was wrong with her, she said. In other words, her trouble was simply old age. (That was rather a broad statement, when we consider that she was not an old lady at all—only 65.) Her main troubles were that she often got out of breath and her feet and ankles were swollen. They were swollen so much that she often had considerable trouble getting her shoes on. After a while, in fact, she was not able to get them on at all. When this happened, she allowed her children to call a doctor.

When he showed up, about the first thing he noticed was her shortness of breath. He noticed, too, that her lips were blue, and also that her neck and veins were markedly enlarged. He began to think of arteriosclerosis (hardening of the arteries) at once. But he wanted to make a thorough examination before reaching a definite diagnosis. So he took her blood pressure. It was high. He placed his stethoscope on her chest and, while she breathed in her short-breathed way, he listened to her heart. He made some interesting discoveries about it too. It was larger than it should have been. Its beats were irregular. And it sounded weak. Then he shifted his stethoscope somewhat to find out something about her lungs. They were found to contain some fluid.

Later examinations brought out some other bits of information about that lady's condition. Her liver was also abnormally large. And it was tender. Whenever he would press his finger against those swollen places in her legs, he would create valleys or depressions in the flesh. That swelling, he found, was not confined to the legs proper but extended well above her knees. Feeling some of the arteries, he found that they were hard. They did not yield readily to pressure, as they should have done.

That shortness of breath was progressive, the doctor learned. At first, she told him, she had noticed it only when she was climbing a particularly steep set of stairs. Later she had had trouble getting her breath while walking along level ground or in a room. By the time she had agreed to be examined she had reached such a stage as to make breathing difficult even when she took such slight exercise as getting up from her favorite chair. Sleeping at night was almost impossible unless she was propped up with pillows. From time to time she had been waking up all choked. Then the only way she could get any relief was to get out of bed and sit in a chair. Occasionally that shortness of breath was accompanied by nausea.

By the time the doctor had completed his physical examination and his questioning, all doubts had been removed: She unquestionably had hardening of the arteries. But she also had more. It had led to a form of heart disease, known as dropsy.

What brings on this condition? What causes people to get like this woman, whom Dr. A. L. Gray, director of the Division of Preventable Disease Control of the Mississippi State Board of Health, tells us about? What can be done about hardening of the arteries? How can it be prevented?

In the first place, hardening of the arteries is, in a sense, a natural thing. It is one of the changes that often come with age. It is much more likely to be found among those in their sixties than in comparative youngsters, such as men and women in their forties. However, a considerable number of people get it a long time before they can be said to be old, or even approaching old age. And, fortunately, a great many people live to be quite old without getting it.

This disease takes on several forms. The arteries may harden in one part of the body while they remain normal in other parts. For example, they may become hardened in the eyes and nowhere else. Their general effect, whenever this hardening occurs, is to reduce the supply of blood to the affected area. When that area is the brain the result may be seen in the well known condi-

tions associated in our minds with old age. A person with hardened brain arteries, for instance, may be "childish." He may have his feelings hurt by every trivial slight or oversight. He may cry like a child. Or he may find his memory slipping: It is hard for him to remember even the most important things. On the other hand, when those changes occur in the arteries leading to the heart, that vital organ is not able to do the work expected of it. Heart disease may result, as it did in the case of the lady Dr. Gray mentioned. The usual forms of heart disease resulting from hardening of the arteries are known as angina pectoris and coronary occlusion. The first-mentioned causes sharp pains in the heart region which shoot out to the arms and hands. The other heart condition mentioned consists of the formation of blood clots. These block the flow of blood to the heart, just as a rock might block the flow of water in a pipe. That blocking may also be due to the increased thickness of the walls of the arteries.

When the arteries harden they also usually thicken. Both of these changes place more work on the heart. You can readily understand how this is. Imagine the heart as a powerful pump, which it really is. Its job is to force blood through every small area of the body just as a pump forces water or oil or some other liquid through an intricate system of pipes and tubes. If those pipes and tubes become rigid, the pump's work is increased. It is also increased when silt or trash sticks to the inside walls, making them thicker at the expense of the inside diameter. The same thing happens too when grit or pebbles accumulate in the pipe, forming small dams against the smooth, steady flow of the liquid. And this is also true of the blocking of the smooth, steady flow of blood from the heart to the rest of the body.

When this happens, the person whose arteries have undergone this change may develop high blood pressure. The heart tries to adjust to this new demand upon it by a thickening and strengthening of the heart muscles. But that adjustment is handicapped by the diminished flow of blood to the heart, which, remember, must be fed with that life-giving fluid like the rest of the body, in spite of the fact that it also furnishes it for the rest of the body. The result is what would be expected. The heart begins to stretch, increasing in size, as happened in the case of the elderly lady Dr. Gray mentioned. It

also becomes weaker, as also happened in her case. Sooner or later, unless that progressive change is arrested, the heart simply fails, like a tired and overworked animal. Its failure may bring on sudden death, the kind we read about so often in the newspapers and hear about so often on the radio newscasts. Or the sick and undernourished heart may start rebelling in a less dramatic way. It may start sending those sharp angina pains to the hands and causing them to appear in the chest. It may bring on some other heart condition which proves non-fatal but causes people's doctors to give them some Dutch uncle talk about taking things easy and coddling damaged hearts.

Surprisingly enough, the apparent increase in the prevalence of hardening of the arteries in the United States may be due in part to our national prosperity. That would strengthen the old belief that there is hardly any such thing as an unmixed good, that every pleasant thing which happens to us probably has its penalty. At least one medical authority thinks that is true of prosperity and hardening of the arteries.

Dr. D. G. Sutton, of the Northwestern University faculty, made a suggestion of this kind some time ago. The occasion was the four-day Mid-South Postgraduate Medical Assembly in Memphis. He mentioned particularly these fruits of prosperity: alcohol, over-eating and general high-pressure living. The speaker declared that business men were especially susceptible to the dangers of high living. He went on:

"Business men gather together, have several drinks, eat a big lunch. Then at night they take customers out, have more drinks, eat another big meal late at night. No wonder they have heart failure."

The victim of hardening of the arteries probably first becomes conscious of the disease by his symptoms, unless he is wise enough to have periodic physical examinations. But to the doctor it means the accumulation of a fatty substance in the arterial walls. Medical men have given it the name of cholesterol. It was thought for a long time that certain foods were large-scale producers of this substance. Eggs, cream and fats in general were under heavy suspicion, and victims of hardening of the arteries were told by their physicians to avoid them. More recently, however, medical opinion has leaned to the theory that these products do not stand alone as large-scale producers of cholesterol. Many doctors now assume that

virtually every tissue of the body is capable of producing it. So the eating of eggs, cream and other fatty substances is not placed on the "don't" list as often as formerly. Dr. Forrest B. Kendall of the Columbia University medical faculty is a leader in this new concept of the nature of the disease, its cause and curbing.

Calcium is receiving more and more attention as a factor in the prevalence of arteriosclerosis. Dr. Albert I. Lansing and some of his fellow-faculty members at the Washington University Medical School made a study of the large artery leading from the heart, known as the aorta. The aortas of more than 1,000 people were examined. Their ages ranged from very young babies (stillborn) to oldsters said to be 100 years of age.

Dr. Lansing and his fellow-workers found very little calcium in the aortas of young people less than 20 years old. The amount found increased markedly as they studied those of older people, they said. That made those older people's arteries hard and brittle. Arteries containing less than 1½ per cent of calcium did not cause the formation of cholesterol, these researchers reported. They added that the arteries of young people were found to contain only a fraction of one per cent of calcium.

When a blood clot forms in a large artery there is more likely to be serious trouble than when such blocking involves a small one. That is easy to understand, for when a larger artery is involved, more of the heart wall is affected. The danger that a heart attack will prove fatal is largely, but not altogether, determined by the size of the artery involved. When a particularly large artery is blocked by a blood clot, immediate death is very likely. Conversely, a person relatively fortunate enough to have such clotting and blocking occur in a small artery has a better chance of surviving that first attack.

For some reason, coronary occlusion occurs more often among men than among women. Its particular victims are men between 50 and 70 years of age. However, it is by no means unknown among people of both sexes in their 40's or even 30's.

While many people live a long time after having heart attacks due to hardening of the arteries, they need to be careful. They can work and even work fairly hard. But they

have to keep their eyes on themselves, so to speak, to prevent themselves from doing too much. It is certainly much better to prevent hardening of the arteries and its fruits than to try to cope with them after they occur. This usually is not so very difficult. Adjust your living habits to the stern but not tragic fact that you are getting up in years and cannot safely do some of the things you used to do. Avoid overweight. Don't let yourself become excited or overworried. And have your physician give you a thorough physical examination from time to time, with particular attention to the heart and arteries.

Hardening of the arteries is one of that group of illnesses against which the medical profession and public health agencies have not been able to make much headway. That probably is because the responsibility for preventing it rests with the individual, who often does not want to make the slight sacrifices which playing safe involves. But, as people become better informed in health matters, they become more willing to pay the price of health. So we may hope for progress in this important health field, too.

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director

SPECIMENS EXAMINED

May 1953

Examinations for diphtheria bacilli and Vincent's .....	94
Agglutination tests.....	1,125
Typhoid cultures (blood, feces, urine and other) .....	612
Brucella cultures.....	25
Examinations for malaria.....	176
Examinations for intestinal parasites.....	3,616
Serologic tests for syphilis (blood and spinal fluid).....	24,940
Darkfield examinations .....	3
Examinations for gonococci .....	1,664
Examinations for tubercle bacilli .....	3,168
Examinations for meningococci .....	0
Water examinations .....	1,657
Examinations for Negri bodies .....	162
Milk and dairy products examinations .....	4,964
Miscellaneous .....	2,022
Total	44,228

According to the National Office of Vital Statistics the trends of the past several years are continued in 1952: a substantial decline in tuberculosis mortality but a comparatively small decline in the number of newly reported cases.—*Public Health Reports, June 1953.*

**BUREAU OF PREVENTABLE DISEASES**  
**W. H. Y. Smith, M. D., Director**  
**CURRENT MORBIDITY STATISTICS**

	1953		
	Apr.	May	E. E.* May
Typhoid and paratyphoid fever.....	7	5	6
Undulant fever .....	2	2	1
Meningitis .....	21	19	11
Scarlet fever .....	28	34	28
Whooping cough .....	25	46	133
Diphtheria .....	16	7	11
Tetanus .....	1	3	4
Tuberculosis .....	165	216	263
Tularemia .....	4	2	1
Amebic dysentery .....	13	8	2
Malaria .....	0	2	47
Influenza .....	916	170	232
Smallpox .....	0	0	0
Measles .....	411	504	900
Poliomyelitis .....	9	32	4
Encephalitis .....	0	2	1
Chickenpox .....	307	282	210
Typhus fever .....	4	0	18
Mumps .....	153	319	168
Cancer .....	395	440	364
Pellagra .....	3	8	2
Pneumonia .....	270	174	197
Syphilis .....	195	207	1018
Chancroid .....	8	12	12
Gonorrhea .....	299	416	488
Rabies—Human cases .....	0	0	0
Positive animal heads .....	76	66	0

As reported by physicians and including deaths not reported as cases.

\*E. E.—The estimated expectancy represents the median incidence of the past nine years.

**BUREAU OF SANITATION**

**Arthur N. Beck, M. S. in S. E., Director**  
**MUNICIPAL PUBLIC WATER SUPPLIES**  
**Contributed by**  
**C. W. White, B. S., M. S.**  
**San. and Pub. Health Engineer**

Although the supervision of public water supplies is a responsibility of the State Department of Health, questions regarding these supplies are often directed to local health departments. In view of this it is felt that a general article relative to State law and Health Department rules, regulations, policies and practices might be helpful. This paper will therefore attempt to cover briefly the responsibilities of local municipal officials or owning agency and the State Board of Health. Should there be specific questions that are not answered clearly by this paper, please contact the Bureau of Sanitation.

**STATE WATER LAW**

There are sections of the Code known as the State Water Law. It may be found in the 1940 Code of Alabama under Title 22, Chapter 3, Sections 117-131 and 137-140, in-

clusive. The highlights of the law are as follows:

1. "The State Board of Health shall have general supervision and control over all water supplies and waterworks in the State insofar as purity, potability, wholesomeness, and physical quality of water furnished may affect the public health or comfort, and shall from time to time, by its employes or agents, examine and investigate the sources of supply of waterworks systems and the method of filtering and treating water and delivering the same to consumers." The engineers in the Bureau of Sanitation, through the State Health Department as operating agency of the State Board of Health, are responsible for the general supervision and control of all public water supplies.

2. A permit to furnish or supply water for domestic use has been issued to the owner of each public supply that has met the approval of the State Board of Health.

3. Water systems that supply water solely for use on private property upon which there is no industrial camp, hotel or resort, or furnishes less than 50 persons, are not classed as public water supplies and are not under routine supervision of the State Health Department.

4. The owners of all public supplies are required to collect water samples and deliver them to the State Laboratory (or State Branch Laboratory) for bacteriologic examination, at least monthly.

A schedule for submission of samples to the Laboratory is prepared by the engineers at the first of each year and a copy of the schedule is sent to the owner of each supply. The schedules are planned in cooperation with the State Laboratory and prevent overcrowding the Laboratory at any one time. The Laboratory sends the reports of the results of the bacteriologic analysis to the owners and copies to the Bureau of Sanitation. The engineers interpret the reports and, if they are unsatisfactory, the owners are advised of the action that should be taken.

The number of samples requested is usually in accordance with Public Health Service Drinking Water Standards and is approximately one sample per month per 1,000 persons served.

5. The owners are also required to submit complete plans and specifications when a new supply is proposed, or additions or

alterations to existing systems are anticipated. The engineers review the material and if found to be in accordance with good waterworks engineering practices a Permit for Construction is issued for the proposed work. A Permit to Use the facilities is issued when the project is completed in accordance with approved plans and specifications.

COOPERATION BETWEEN STATE HEALTH  
DEPARTMENT ENGINEERS AND OWNERS  
OF PUBLIC SUPPLIES

The above mentioned law is quite specific in setting out the responsibility of both the owners of public supplies and the State Board of Health. The engineers assigned to carry out the State Water Law wish to express their appreciation for the cooperation that the owners have given in seeing that a safe and potable water is produced. Although the law is mandatory, it is felt that with proper cooperation and mutual understanding the intent of the law can be carried out without any legal procedure. Following inspections of waterworks facilities, the engineers make a point to discuss with the responsible waterworks officials any deficiencies found, and after such a conference problems can usually be worked out satisfactorily. This approach used by the engineers has been very satisfactory and it is realized that this policy has proved helpful to the officials in understanding the position and responsibility of both the owner and the State Board of Health.

PROCEDURE FOR SECURING PERMIT FOR NEW  
SYSTEMS OR ADDITIONS TO EXISTING SYSTEMS

When a new water supply is proposed or when additions, modifications, or alterations to an existing plant are proposed, it is suggested that a responsible consulting engineer familiar with waterworks practices be employed to represent the owner of the supply. The Bureau of Sanitation can furnish a list of consulting engineers who offer their services in this field. The consulting engineer can make a study of the existing conditions and prepare an engineering report setting forth the facilities needed, estimated cost and other pertinent data. When this engineering report is prepared the Bureau of Sanitation engineers usually discuss the proposal with the consulting engineer and make suggestions or recommendations to the engineer. In following this

procedure it is felt that a real service is rendered and a friendly and cooperative feeling created between the Bureau of Sanitation and the consulting engineer representing the municipality.

After the engineering report has been submitted to the city officials they usually authorize the engineer to proceed with the preparation of plans and specifications. The completed plans and specifications must be submitted to the Bureau of Sanitation for review, comments and suggestions. If the plans and specifications meet the minimum requirements of the State Board of Health a Permit to Construct the proposed facilities is issued. Upon completion of construction the engineers from the State Health Department should be advised so that they can inspect the facilities. If it is found that the approved plans and specifications have been followed, a Permit to Use is issued. Minor main extensions and similar work may be done without receiving approval from the State Health Department.

The Bureau of Sanitation, in cooperation with the Alabama Water and Sewage Works Association and the State Universities, conducts a short course school for water and sewage works operators. These schools are conducted annually, alternating between the University of Alabama and the Alabama Polytechnic Institute. The school usually lasts four days, followed by a conference of the Association. The courses are planned and conducted by professors, instructors, experienced operators, and engineers of the State Health Department.

The program and courses are planned so as to give the operators the benefit of all experiences and knowledge of the various instructors, as well as an opportunity to discuss their detailed problems with other operators. Printed program and notices are sent to waterworks operators and city officials in sufficient time for them to make final arrangements to attend.

At the end of the school an examination is given for the operators who wish to qualify for a Certificate of Competency. The operators successfully completing the examination are given a certificate showing the grade or class in which they qualified. It is felt that these schools have given the operators well rounded, practical and useful information pertaining to their work.

## BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR MARCH 1953, AND  
COMPARATIVE RATES

Live Births Stillbirths and Deaths by Cause	Number Registered During March 1953			Rates* (Annual Basis)		
	Total	White	Colored	1953	1952	1951
Total live births	6824	4108	2716	25.3	25.3	25.4
Total stillbirths	165	77	88	23.6	25.2	32.6
Deaths, stillbirths excluded	2302	1313	989	8.5	9.4	9.7
Infant deaths:						
under one year	246	109	137	36.0	39.9	41.9
under one month	168	82	86	24.6	25.5	27.4
Cause of Death						
Tuberculosis, 001-019	44	23	21	16.3	17.7	29.6
Syphilis, 020-029	7	5	2	2.6	1.1	3.4
Typhoid and paratyphoid, 040-041					0.4	
Dysentery, 045-048	3	2	1	1.1	0.4	0.8
Diphtheria, 055	1	1		0.4	0.4	0.4
Whooping cough, 056					1.5	1.1
Meningococcal infections, 057	5	4	1	1.9	1.5	1.1
Poliomyelitis, 080, 081						0.4
Encephalitis, 082, 083					1.1	
Measles, 085					3.4	0.4
Malignant neoplasms, 140-205	247	174	73	91.7	105.8	85.8
Diabetes mellitus, 260	25	11	14	9.3	8.7	13.7
Pellagra, 281	4	2	2	1.5	0.8	1.5
Vascular lesions of central nervous system, 330-334	304	172	132	112.9	117.8	119.9
Other diseases of nervous system and organs of special sense, 340-398	24	12	12	8.9	12.0	12.1
Rheumatic fever, 400-402	7	4	3	2.6	1.5	3.0
Diseases of the heart, 410-434	494	345	149	183.4		
Hypertension with heart disease, 440-443	185	81	104	68.7	281.5	279.3
Diseases of the arteries, 450-456	47	29	18	17.4	21.8	11.8
Other diseases of circulatory system, 444-447, 460-468	36	15	21	13.4	13.5	9.5
Influenza, 480-483	74	35	39	27.5	26.3	26.6
Pneumonia, all forms, 490-493	95	41	54	35.3	50.1	58.4
Bronchitis, 500-502	6	4	2	2.2	0.8	1.5
Appendicitis, 550-553	5	4	1	1.9	1.1	1.1
Intestinal obstruction and hernia, 560, 561, 570	10	7	3	3.7	3.0	1.9
Gastro-enteritis and colitis (under 2) 571.0, 764	3	1	2	1.1	3.0	3.0
Cirrhosis of liver, 581	13	12	1	4.8	6.4	6.1
Complications of pregnancy and childbirth, 640-689	16	2	14	22.9	11.6	17.4
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 682, 684	2	1	1	2.9	1.4	1.4
Congenital malformations, 750-759	31	22	9	4.5	4.5	3.6
Accidental deaths, total, 800-962	126	76	50	46.8	56.1	70.2
Motor vehicle accidents, 810-835, 960	53	32	21	19.1	21.1	16.4
All other defined causes	385	199	186	143.3	143.4	151.8
Ill-defined and unknown causes, 780-793, 795	109	32	77	40.5	43.3	65.0

\*Rates are expressed as follows: birth and death rates per 1,000 population; infant death rates per 1,000 live births; stillbirths per 1,000 deliveries; maternal deaths per 10,000 deliveries; deaths from specified causes per 100,000 population.

**Gastric Resection**—There are many factors by which one must be guided in deciding upon the feasibility of resection in the individual case; the age and general physical condition of the patient, the time element from perforation to surgery, the existence of suitable conditions and indispensable technical exigencies are most important.

The arbitrary age limit of 50 years has been suggested in these cases. This element is elastic, however, when viewed in the light of the frequent disparity between chronologic and physiologic age, particularly when other factors are very favorable. In one of my own cases, the patient, 55 years of age, weathered the ordeal without any difficulty. Along the same line, the existence of serious preoperative complications or coincidental disease such as that of the heart, lungs or kidneys is a factor that tends to preclude resection.

Resection as a primary procedure is more reasonably entertained when perforation has occurred twelve hours or less prior to the time of surgery. Peritoneal insult is not so great then and the technical accomplishment of resection is actually aided somewhat by the inflammatory edema which delineates the lines of cleavage. Between twelve and twenty-four hours the procedure becomes less reasonable, and after twenty-four hours it is undoubtedly contraindicated. As a matter of fact, at this stage of the disease, the conservative treatment is a very likely choice.

It is, perhaps, superfluous to remind you that in the case of perforation the patient's life is in jeopardy and by present day standards he is not really prepared for any formidable procedure. Therefore, it is absolutely imperative that the total capacity of modern surgery in all details be available before any thought of resection is entertained. When the above mentioned factors have been evaluated and considered to be favorable, resection probably is practical in a higher percentage of cases than we have formerly thought.

Having determined the feasibility of resection, let us finally turn again to the consideration of advisability of resection. Specifically, what cases are most likely to benefit from resection? Here we list those cases in which findings at operation or in which past performance indicates failure of the patient to cope with his ulcer problem—individuals with an obviously high index of the ulcer diathesis.

The first of these is the "bleeding ulcer" type. This type comprises about 16 per cent of perforated cases and its importance lies in the fact that a very large number of these patients have multiple ulcer which may influence the picture in the early or late postoperative stages.

Patients with associated obstruction constitute a group which, though small in number, suggests the need for definitive surgery.

The so-called chronic ulcer type with history of increasing difficulty over a period of many years admits of an incapacity to obtain relief on medical management. Numerically speaking, this is the largest of the categories named.—*Condry, West Virginia M. J., July '53.*

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## INTRAVENOUS ANESTHESIA FOR OBSTETRICAL DELIVERY

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That there is no perfect anesthesia for all obstetric deliveries is attested by the innumerable essays describing different techniques or minor modifications of old procedures. The perfect anesthesia for obstetric delivery is still the clinician's goal. This anesthetic must meet certain well defined criteria to qualify as the perfect method or drug.

To expect one agent to produce complete amnesia and anesthesia for a number of hours and to have no ill effects on the mother, her baby, and the course of her labor (and probably upon her husband and the grandmother) is asking too much of even the modern day magicians of the chemical laboratories.

All patients do not react in the same manner and to the same degree to equal doses of the same drug. This pharmacologic principle certainly applies to the practice of obstetrics and must be kept in mind when attempts are made to relieve the pain of labor and delivery.

It seems unlikely that a single agent will soon be available which will produce perfect anesthesia and analgesia for the entire process of labor. We recognize that no one drug or technique will fill the need of all women in labor, nor the conditions under which her labor is conducted, nor the philosophy and training of the obstetrician in attendance. By combining several drugs it is easier to obtain analgesia, amnesia, and anesthesia safely for both the mother and her baby.

Read before the Alabama Association of Obstetricians and Gynecologists, Birmingham, April 18, 1953.

The intravenous route for anesthesia has been a favorite of ours for a number of years. We have found it suitable to the needs of our patients who are anxious to be asleep at the time of delivery. It requires no expensive and cumbersome equipment, except available oxygen and some method of aspirating the nose and mouth in rare instances. It is quick and the results are immediately apparent. Regardless of the mode of administration, the dosage must be varied to get the best results. No one agent in our experience will produce amnesia during the first stage of labor and anesthesia for the second stage of labor and yet have no ill effect on the baby and the progress of labor.

Our early experience with intravenous anesthesia consisted in the use of Evipal for the second stage of labor. These patients were delivered at Brookfield, a home for unmarried mothers near Richmond. There was no anesthetist in regular attendance. A measured dose, based on the patient's weight, was given intravenously. Gloves were changed, the delivery was done and, if everything went smoothly, there was anesthesia for repair of the perineum. This technique, however, did not secure amnesia or anesthesia during the first stage of labor, and, in the event the baby required attention, there was not adequate anesthesia for the perineal repair and another agent was needed.

After thiopental (Pentothal, Abbott) was shown to be effective and relatively safe for delivery, we used this agent for a number of obstetric deliveries. It is efficient and satisfactory as a short acting anesthetic for the termination of labor and can be used

when other drugs have been given to secure analgesia for the first stage of labor. It requires close supervision, and the possibility of laryngospasm and respiratory depression is always present. In order to shorten the actual anesthesia time, pudendal nerve block with procaine was used for the repair of the episiotomy. In 1944 our experience with this drug was tabulated and described by Dr. Pierce Rucker in a discussion of a paper by Hellman and Eastman on Pentothal Anesthesia before the American Gynecological Society. We still use Pentothal where a short anesthetic is needed. We find it useful in conjunction with infiltration anesthesia for cesarean section. Given for a brief period it does not affect the baby appreciably. For dilatation and curettage of the uterus Pentothal is a very satisfactory anesthetic.

During the past five years we have used Pentothal intravenously as the anesthetic agent for 473 patients on whom minor procedures, such as curettage of the uterus, incision and drainage of Bartholin gland abscess, removal of secundines, biopsy and cauterization of the cervix, were done. Pentothal intravenously, combined with procaine infiltration of the abdominal wall, was used as the method of anesthesia in 90 cases of cesarean section. There were no maternal deaths in either group. The effect on the baby was minimal. Most of the babies breathed as soon as the nose and mouth were cleared by suction. In a few cases there was some depression of the baby's respiration, and oxygen under pressure was used. The same type of anesthesia has been employed in 179 cases for ligating the fallopian tubes in the puerperium as a method of sterilization.

After Lewis' report on the use of vinbarbital intravenously we tried to adapt it to our practice. It proved to be effective and prompt in its action. The patients, however, did not awaken for a long time after delivery. At that time we had no recovery room, and the patients were removed from the delivery room to their beds. The family was often upset by the long recovery phase. Constant attention was necessary for a number of hours. We did not have enough nurses to assign one to each patient during recovery and consequently had to give up the technique. There were no anesthetic accidents associated with this program.

Pentobarbital sodium (Nembutal, Abbott) was made available to us in solution

for intravenous use by the manufacturer in 1948. We used it cautiously during the first stage of labor and added Pentothal and pudendal nerve block or ether and pudendal nerve block for delivery. With increasing experience we omitted the Pentothal entirely because of the attention its administration required and the time needed for the preparation of the solution. The Nembutal served for the stage of cervical dilatation and for the stage of delivery. We continued the practice of pudendal nerve block with procaine at the time of delivery.

We do not have a regular anesthetist in attendance on our obstetric service. Anesthesia and analgesia are controlled by the attending physician, with the aid of the house staff and nursing staff. Since the analgesia of the first stage blends into the anesthesia for delivery, this is easily regulated by additional Nembutal or Demerol intravenously.

At the present time we rely upon mepi-peridine (Demerol), in conjunction with hyoscine and Nembutal, for analgesia and anesthesia. In some cases the rectal administration of paraldehyde diluted with 10 per cent dextrose is employed during the first stage of labor, and in a few cases we use ether in oil by rectum after the Gwathmey technique. Our practice is to administer Demerol 100 mg. and hyoscine .6 mg. intramuscularly, in combination with Nembutal 200 mg. orally, as soon as the patient's labor becomes uncomfortable, with little regard to cervical dilatation.

When this is no longer sufficient to make her comfortable she is moved to the labor room (a new addition since the vinbarbital days) and Nembutal is given intravenously. This is supplemented by hyoscine in .3 mg. doses intramuscularly each 2-3 hours as indicated and by a second or third intravenous injection of Nembutal when needed. The amount of Nembutal given with each injection varies from 200 to 350 mg., depending upon the patient's response. It is given slowly, generally in the antecubital vein, and as soon as the patient becomes drowsy administration is stopped. When the cervix is fully dilated the patient is moved to the delivery room and preparation made for the actual delivery. At this time, additional anesthesia is generally needed. We have obtained this by additional Nembutal intravenously, or by additional Demerol intravenously in 100 mg. doses, or by ether given

by inhalation, depending upon the amount of relaxation and depth of anesthesia needed for each case. If the total dose of Nembutal is near 1000 mg. we are more inclined to use Demerol than additional Nembutal for delivery. After cleansing the vulva, thighs, abdomen and perineum, pudendal nerve block is done with 1 per cent procaine. This extra step assures adequate anesthesia for incision and repair of the perineum. We have tried to keep the total dosage of Nembutal to less than one thousand milligrams in most cases because of its possible effect upon the baby. This is a somewhat arbitrary limit and is often exceeded when dealing with a prolonged labor, or with an exceptionally large patient, without any noticeable effect upon the onset of the baby's respiration. In cases where more than one thousand milligrams of Nembutal have been given, we are prepared to administer Metrazol to the baby, if respiration is delayed unduly. We tried giving the mother Amphetamine in some cases when labor was prolonged, and an unusually large amount of Nembutal was given in an effort to assure prompt onset of fetal respiration. This technique was dropped since it was unnecessary in many cases and not too satisfactory in those in which it was used.

Pentobarbital sodium (Nembutal, Abbott) is a barbituric acid derivative. It is described as ethyl (1-methyl-butyl) barbituric acid and belongs to the group of short but not the ultra-short acting barbiturates. It is supplied in 50 cc. rubber capped vials containing 50 mg. per cubic centimeter. It is stable in solution, and multiple doses can be withdrawn from this stoppered bottle. The convenience of this is obvious. Ampoules are also available containing a powder in 500 mg. amounts to be dissolved for intravenous use. When administered intravenously the effects of the drug are seen almost at once and may vary from drowsiness to complete anesthesia, depending on the total amount of the drug given and the individual reaction to it. There is no average dose that can be depended on to induce similar effects in different individuals. The barbiturates are mobile in the variability of the dose required to produce a certain depth of narcosis. This important point must be kept ever in mind and the pentobarbital given symptomatically, slowly, remembering that the maximum depression will be apparent ten to fifteen minutes after

injection. The site of action of the barbituric drugs is primarily on the midbrain. Remembering this, it is understandable that a certain amount of restlessness will be noted during uterine contractions in a patient who has received the drug.

The fate of pentobarbital in the body is not too well understood. It seems that it is at least partly altered by the liver, probably as a side chain oxidation process. The degradation products appear in the urine, but as a rule have lost their anesthetic potency. Destruction in the liver is the basis for the evanescent effects of these short acting barbiturates. One patient in this series demonstrated a contraindication to the use of Nembutal where there is any impaired function of the liver. This 28 year old, white patient, the mother of four children, entered the hospital at term in early labor. She received during her short labor 200 mg. of Nembutal by mouth and 250 mg. intravenously. Delivery was accomplished by low forceps extraction of a healthy child. The mother did not awaken in the usual three to six hours after delivery but continued in a state of profound narcosis. Her blood pressure was normal and her respiratory rate unchanged. Delivery was at night, and on the following morning it was noted that there was a faint jaundiced color of her skin and sclera. She was treated with intravenous fluids. Metrazol and Benzedrine were given with no obvious change in her state of consciousness. Studies of her blood showed altered liver function. No renal function studies were done. Urinalysis was normal. There was no azotemia. Her jaundice was more obvious on the second day. By the fourth day her state of narcosis began to lighten somewhat, and on the fifth day she was awake, and apparently normal. She left the hospital on the seventh day, still slightly jaundiced but continued to improve. Her ultimate recovery, as reported by her family physician, has been complete. It was later learned that this patient had recently had an attack of what was called influenza. One of our medical consultants postulated that she may have had a hepatitis of virus origin. At any rate, it seems that a patient with suspected liver disease should not receive barbiturates.

When the drug was first used we feared there might be a problem of depression of respiration if the dose was to be at all effective. This did not occur, except that the

excited and apprehensive patient became calm and dropped into a state resembling sleep, in which the respirations were regular but not unduly slow. There was no marked change in blood pressure except in the excited patient just mentioned. We no longer routinely take blood pressure after the administration of Nembutal intravenously.

Recovery of consciousness after delivery under Nembutal, in the dosage we have found effective, varies from about two hours to six or seven hours. At one time, in an attempt to shorten this phase, we used Metrazol intravenously with some success. We also tried the effects of Amphetamine in a few patients with some benefit, but when one of the patients who received Amphetamine complained bitterly of headache the following day, we became apprehensive that the blood pressure rise associated with Amphetamine administration might result in an intracranial hemorrhage. Since that time this drug has been used only sparingly. There has been no real indication to shorten the recovery phase in most instances, and now we prefer to let the patient just "sleep it off." It is well to know, however, that it is possible to awaken these people if need be. In a few cases there has been a marked fall in blood pressure immediately after delivery where no obstetric cause was apparent. These individuals have responded promptly to the administration of Amphetamine in 10 to 20 mg. doses intravenously.

Phlebitis, developing near the site of venipuncture, has occurred in some patients. There has been one case of a non-fatal pulmonary complication which might be attributed to the phlebitis. At any event, both the phlebitis and the pulmonary lesion occurred in the same patient. The cases of phlebitis have occurred after some trouble was encountered in entering the vein and are probably associated with extravasation of Nembutal, as well as injury to the vein. The Nembutal solution is alkaline in reaction and irritating when injected into tissues. The frequency of phlebitis seems to increase each time a new interne comes on the service. With an increase in his experience we have less difficulty with phlebitis. The patients with phlebitis have been quite uncomfortable for several days after delivery, and the arm has been tender, swollen, and painful. We have seen no permanent damage to the extremity as a result of phlebitis associated with the intravenous injection

of Nembutal. We are currently exploring the possibilities of Pentothal given by rectum early in labor in order to reduce the number of venipunctures given each patient. So far, it seems that it will be a fairly satisfactory method.

We have had one maternal death in a patient given Nembutal during labor. This white patient, 28 years old and pregnant for the first time, entered the hospital for induction of labor at term. After routine preparation the membranes were ruptured with a clamp, and when labor did not follow within 24 hours she was given a 1/5000 solution of posterior pituitary extract intravenously. The rate of flow was regulated so that uterine contractions occurred each three to four minutes. Fetal heart sounds were unchanged. After four hours of this medication, labor seemed well established and the pituitary extract was discontinued. Analgesia was obtained in the manner previously outlined, using Demerol, hyoscine, and intravenous Nembutal. She received only 700 mg. of Nembutal intravenously for her entire labor. Five hours after the pituitary extract drip was discontinued, she was delivered of a living female child, weighing eight pounds, two ounces, and in good condition. The delivery was done as a low forceps extraction after episiotomy was made. The delivery was so uneventful that the nursing supervisor asked permission to leave the room to congratulate the father upon the birth of the child. While the episiotomy was being repaired, the patient went into acute and profound circulatory collapse with deep cyanosis, without any evidence of external bleeding. The uterus was explored. No evidence of uterine rupture could be found and there was no evidence of inversion of the uterus. Intravenous fluids were begun with dextrose, and, while blood was being cross matched, she was given intravenous plasma slowly. We thought that this resembled the syndrome described by Steiner and Lushbaugh and attributed to pulmonary embolism with amniotic fluid and its contents. The patient died one hour and fifteen minutes after delivery, still in a state of shock. Permission for autopsy was not granted.

During the past five years we have used Nembutal intravenously, in combination with other drugs as outlined above, for vaginal delivery of 6,257 patients. It is our practice to deliver the baby when the cervix is

dilated, using whatever method seems to be easiest for the case at hand. Outlet or low forceps extraction is, of course, the most frequent operation. Forceps rotation and extraction are practical under this anesthesia. Spontaneous delivery can often be allowed if the depth of anesthesia is just right, but if the patient is too restless with her pains to remain in lithotomy position, additional anesthesia is generally given. This in turn impairs her expulsive efforts and some type of extraction is then needed. Decomposition of breech presentation and performance of internal podalic version generally require a slightly deeper anesthesia for just a few moments than is safe with Nembutal. We get this with ether given by open drop method. The mask is removed as soon as the feet are delivered. The mother is then given oxygen and the extraction done slowly.

That any anesthetic agent which crosses the placental barrier will affect the baby is undeniable. If the dosage is kept within reasonable limits the hazard to the baby need not be great. There is a distinct advantage to both the mother and the baby in the use of adequate analgesia. The obstetrician is not so likely to be urged to premature efforts to deliver his patient by her cries of anguish and the importunities of her family. In utero the baby has lived with low oxygen saturation. At delivery there is considerable anoxia even when no anesthetic is used. Eastman has shown that the oxygen content of the arterial blood of the cord at birth is only 50 per cent of its capacity. In other words, the oxygen capacity of the cord blood at birth is about 21 volumes per cent. However, it is only about 10 volumes per cent saturated. The venous blood of the cord is 3.3 volumes per cent, which is a percentage saturation of less than 20 per cent. Taylor and his colleagues at the University of Colorado have shown that the oxygen saturation of the blood of infants delivered under different types of anesthesia is not significantly different at birth unless the anesthesia is prolonged or is given with a low oxygen content. He has further shown, however, that it will take longer for most of the infants to reach an oxygen saturation of 90 per cent, which is the average adult figure, if the mothers are given general anesthesia for any length of time. Of the general anesthetic studied, Pentothal seemed to have the best outlook as far as the

baby's prompt recovery was concerned, and for more quickly reaching 90 per cent saturation. No studies on Nembutal were reported.

Where trauma of a difficult delivery is added to the anesthetic hazard of the baby, the outlook is distinctly less favorable.

In general, the babies delivered under the program described began to breathe after the nose and mouth were cleared by simple aspiration. In many cases simple cutaneous stimulation, as rubbing the back, will cause the baby to cry. If respiration is delayed more than two to three minutes, oxygen is then given under controlled positive pressure. This is generally all that is needed.

In rare cases a small amount of Metrazol is used intramuscularly to aid the onset of respiration. The resulting response is so quick that I sometimes think the stimulus of needle puncture is probably more important than the drug itself. Because of the drowsiness of the babies, our nursery routine, as far as feeding is concerned, has been changed. Formerly, these babies were started on lactose water six hours after delivery. At the present time, because of their somewhat drowsy condition, this is deferred until they are eighteen to twenty hours old.

M. S. Lewis, in commenting on the growth and development of children delivered under vinbarbital and other barbituric acid derivatives, stated that he could detect no abnormality in growth and development. Our series of babies is too young to make any such positive statement. We have no reason to think that their subsequent growth will be abnormal in any way. Certainly those who have grown to adulthood after delivery under other barbiturates have not led us to expect any abnormal development. We see no indication to discontinue the use of these drugs because of suspected effect on growth and development.

#### SUMMARY

Our experience with intravenous anesthetic agents in obstetrics is described. There is no one agent that is entirely satisfactory; but by combining several drugs and varying the dosage it is possible to obtain satisfactory analgesia and anesthesia for the first and second stages of labor without unduly affecting the baby.

Pentothal intravenously is satisfactory for short procedures. In combination with pro-

caine infiltration of the abdominal wall, Pentothal is effective anesthesia for cesarean section and puerperal sterilization.

Nembutal intravenously, combined with hyoscine and Demerol and pudendal nerve block, has proved to be an effective way of controlling pain for vaginal delivery in our practice.

The complications of the intravenous anesthetics have been described and the effect on the baby discussed.

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### OUTPATIENT TREATMENT OF HYPERTENSION WITH HEXAMETHONIUM AND APRESOLINE

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In 1951, Smirk and Alstad<sup>1</sup> reported that penta- and hexamethonium bromides administered subcutaneously were successful in reducing the blood pressure in hypertensive patients. In 1952, Schroeder<sup>2</sup> demonstrated the effects of 1-hydrazinophthalazine on the hypertensive syndrome and later described a method for the control of hypertension using orally administered hexamethonium and 1-hydrazinophthalazine.<sup>3</sup> In his series he hospitalized his patients for initiation of therapy. After a reduction of blood pressure was attained the patients under treatment were instructed in the technique of determination of their own blood pressure. The dosage of hexamethonium was then varied individually according to

the level of the systolic blood pressure. The purpose of this report is to present a simplified regimen for the use of these drugs in ambulatory patients.

Hexamethonium is a profound autonomic blocking agent.<sup>4</sup> By interfering with the action of acetyl choline at the autonomic ganglia, it diminishes transmission of impulses in both the sympathetic and parasympathetic pathways. Blocking the sympathetic stimuli results in a dilatation of the peripheral arteriolar bed and a consequent decrease in the blood pressure. The parasympatholytic effects of this agent constitute the chief side reactions to this drug and unless they are carefully managed may be exceedingly distressing and may necessitate interruption of therapy.

Hexamethonium is poorly absorbed from the intestinal tract. Between 19 and 30 per cent of the oral dose can be recovered in the stools.<sup>5</sup> The absorbed drug is excreted by the kidneys, and in the presence of renal insufficiency there may be an excessive accumulation of the drug in the body fluids.

1-hydrazinophthalazine (Apresoline) is a hypotensive drug and when administered

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From the Department of Medicine, Medical College of Alabama.

The hexamethonium used in this study was furnished through the courtesy of Burroughs, Wellcome & Co., Inc., Tuckahoe, N. Y.; and the Apresoline, Ciba Pharmaceutical Products, Inc., Summit, N. J.

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alone is of moderate activity.<sup>2</sup> The drug has a central action, mainly on the hypothalamic region,<sup>6</sup> a peripheral action on the arterioles, and, in addition, blocks the activity of many of the known humoral pressor substances, i. e., hypertensin,<sup>3</sup> sustained pressor principle,<sup>7</sup> serotonin,<sup>8</sup> pherentasin,<sup>9</sup> epinephrine and nor-epinephrine.<sup>10</sup> The drug is readily absorbed from the gastro-intestinal tract, oral doses being as effective as those administered parenterally.

#### MATERIALS FOR STUDY

The patients used in this study were selected from the medical clinic or hospital wards of the Jefferson-Hillman Hospital.

Thirty-three patients, varying from 29 to 69 years of age, were placed on treatment regimens and observed for periods ranging from two to nine months. The duration of diagnosed hypertension in this group varied from one to 20 years, with a mean of eight years. Thirty of the total 33 patients under observation had x-ray or electrocardiographic evidence of cardiac enlargement or other myocardial change. All the patients showed some changes in the ocular fundi, varying in severity from grade I to grade IV (Keith and Wagener). Renal function was impaired in many of the patients, but this did not preclude their use in this study. An arbitrary criterion for including such patients was that though they showed evidence of nitrogen retention it was only of moderate severity. (The NPN was less than 45 milligrams per cent.)

Thirty-two of the patients were of the "benign" type. Twenty-nine of these were considered of the "essential" type and three were considered to have hypertension associated with primary renal disease. One case of malignant hypertension was included in the series. There were 10 white patients and 23 Negroes in this series. Twelve

of the patients were men and 21 women. The diagnosis of essential hypertension was arrived at merely on the basis of exclusion of other known causes of hypertension.

*Evaluation of Patients:* Diagnostic procedures used in evaluation of patients for therapy included careful appraisal of the ocular fundi, cardiac status by use of electrocardiograms and roentgenograms, renal function by use of determination of degree of nitrogen retention, Fishberg concentration test, and intravenous pyelograms; and a benzodioxane test. The patients found to have profound renal insufficiency and marked nitrogen retention were excluded from the study.

Blood pressure measurements were made regularly in the left arm with the patient in the sitting position. An aneroid sphygmometer was used in this study.

*Treatment Regimen:* Treatment regimen instituted in all the patients, both in the outpatient clinic and on the hospital wards, was standard with the exception of that of the one patient with malignant hypertension. Only patients with sustained chronic arterial hypertension were utilized in this study, all of whom had failed to respond to conventional medical therapy.

The standard treatment regimen consisted of hexamethonium chloride, the initial dosage being 125 milligrams four times daily, which was started after evaluation of the patient's condition was completed. This drug was administered orally at intervals as widely spaced as possible through the waking period. The clinic patients were followed at weekly intervals, at which time the dose of the drug was increased progressively to 250, 375, and then 500 milligrams administered orally four times daily. At each clinic visit the patient was observed to determine whether an adequate fall in the blood pressure level had occurred or if the patients were having severe hypotensive symptoms. The dosage was then adjusted as was indicated by the symptoms.

As quickly as an adequate hypotensive effect had been obtained with the hexamethonium, the 1-hydrazinophthalazine (Apresoline) would then be added to this treatment regimen in a dosage of 50 milligrams administered orally four times daily. As indicated by the blood pressure response, this dose was also increased by 50 milligram increments to a maximum of 150 milligram

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7. Helmer, O. M.: Cited by Schroeder.<sup>3</sup>

8. Taylor, R. D.; Page, I. M., and Corcoran, A. C.: Abnormal Neurogenic Vasopressor Mechanisms, *Arch. Int. Med.* 88: 1 (1951).

9. Schroeder, H. A.: Personal observations.<sup>3</sup>

10. Moyer, J. H.; Handley, C. A., and Huggins, R. A.: Some Pharmacodynamic Effects of 1-hydrazinophthalazine (C-5968) with Particular Reference to Renal Function and Cardiovascular Response, *J. Pharmacol. & Exper. Therap.* 103: 368 (1951).

doses administered four times daily. Achievement of normotensive levels of blood pressure or the occurrence of frequent hypotensive episodes indicated adequate dosage. From the observation of the hypotensive effect of the combined drug therapy, an attempt was made to select a dosage regimen that would result in good hypotensive effect but with a minimum of hypotensive symptoms. Such a regimen is of necessity a highly individualized one and could rarely, if ever, be applied as a general routine procedure.

The average dose of hexamethonium required daily in these patients was 2.5 grams, with a range of 0.5 to 7.0 grams. An average of 600 milligrams of Apresoline daily was required for maintenance of adequate hypotensive effect with a dosage range of 0.3 to 0.8 grams per day.

THERAPEUTIC RESULTS

**Blood Pressure:** Twenty-six of the 33 patients had a fall in the mean diastolic blood pressure of 20 mm. of mercury or more, with 11 having a decrease in excess of 30 mm. of mercury (Fig. 1). Nine of the pa-

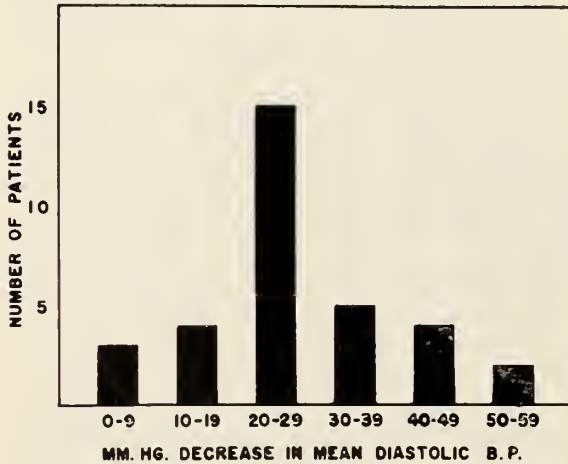


Fig. 1. Chart showing the fall in mean diastolic blood pressure of 33 hypertensive patients treated with hexamethonium and Apresoline.

tients became and remained normotensive (Figs. 2, 3 and 4) and 14 of the patients were maintained at only slightly hypertensive levels. Six of the remaining 10 patients were maintained at moderate hypertensive blood pressure levels that were distinctly lower than their previous control pressures. Even in this group an average decrease of 24 mm. of mercury in the diastolic blood pressure was attained.

The four remaining patients did not show a sustained fall in blood pressure, although

isolated measurements were recorded in each case which were considerably below pretreatment levels (Fig. 5). In addition, each had intermittent hypotensive symptoms which would indicate that their blood pressure was lowered even further at times. However, for the purposes of this study, they are being considered as treatment failures (Fig. 6).

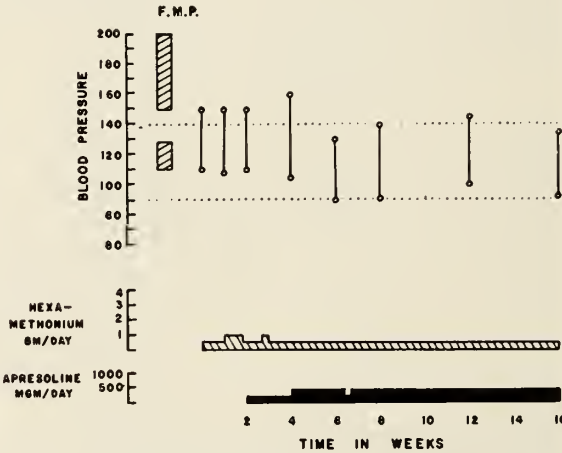


Fig. 2. Patient showing good response to combined hexamethonium and Apresoline treatment regimen.

This 36-year-old colored female (F. M. P.) had moderate cardiac enlargement with electrocardiographic changes indicative of myocardial disease. Her mother, father, and a sister had all had hypertension and died from "strokes." A dose of 0.125 gram hexamethonium was initially administered (0.5 gram daily) and produced no fall in blood pressure. Repeated attempts to increase individual doses to 0.25 gram (1.0 gram daily) failed because of production of hypotensive symptoms. However, with the addition of hydrazinophthalazine, normotension was achieved and has been maintained on relatively small dosage of both drugs.

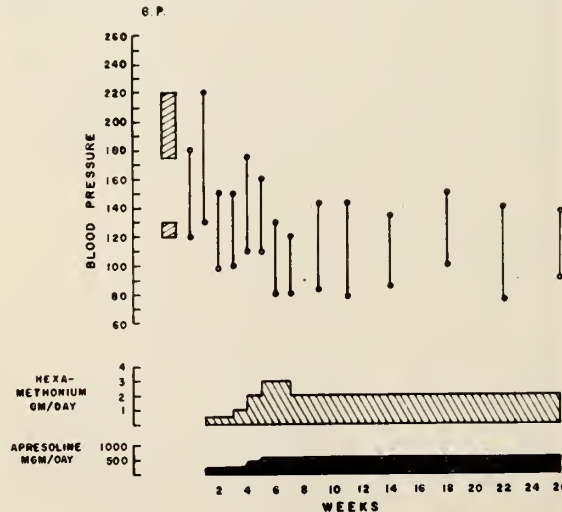


Fig. 3. The effect of the combined treatment regimen on renal hypertension.

This 31-year-old Negro man (G. P.) was first found to have severe hypertension six years previously when admitted to the hospital with a renal calculus and pyelonephritis. Therapy with phenobarbital, low salt diet, and intravenous Pyromen injections was to no avail. On examination his heart was enlarged, and electrocardiogram showed marked changes of myocardial damage, together with left ventricular enlargement. The renal function was impaired, resulting in a persistent slight elevation of the blood NPN. Response to therapy was excellent, and, coincident with the reduction in blood pressure, he noted a generally improved feeling of well being.

When his dosage level was raised to three grams of hexamethonium, he developed episodes of dizziness after ingestion of each dose of the drug. However, reducing the dosage to 2.0 grams per day maintained the patient at normotensive levels.

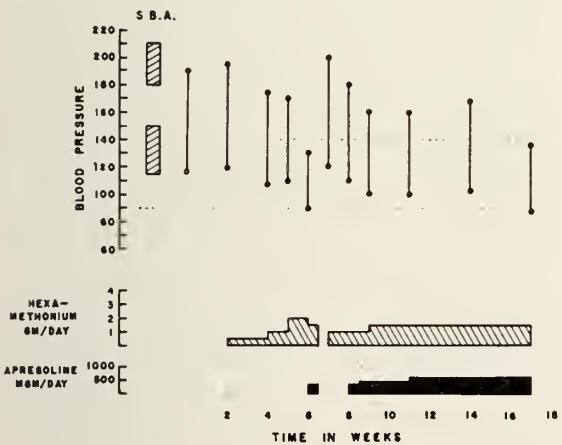


Fig. 4. Hypertension with obesity showing response to the combined drug therapy.

This 54-year-old obese (231 lbs.) Negro woman had known hypertension for twelve years. Response was good but in the seventh week hypotensive episodes interfered with her occupation and she discontinued the medication for three days. Resumption at a lower dosage with a more gradual increase produced an excellent response without the untoward symptoms.

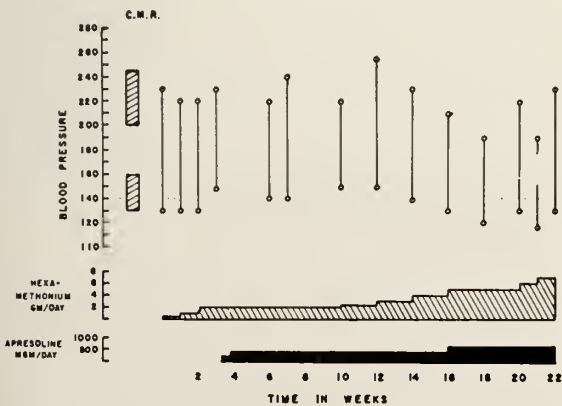


Fig. 5. An apparent failure of hexamethonium and Apresoline therapy in a 57-year-old Negress

who had suffered from severe hypertension for six years. Her response to large amounts of both drugs has not been good. On six and seven gram daily doses of hexamethonium she had only intermittent hypotensive episodes at home which would indicate that blood pressure level fell to lower levels at intervals than those recorded at the clinic.

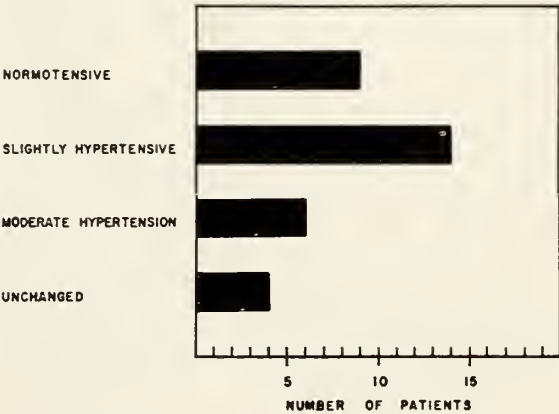


Fig. 6. The status of 33 hypertensive patients maintained on hexamethonium and Apresoline treatment regimen.

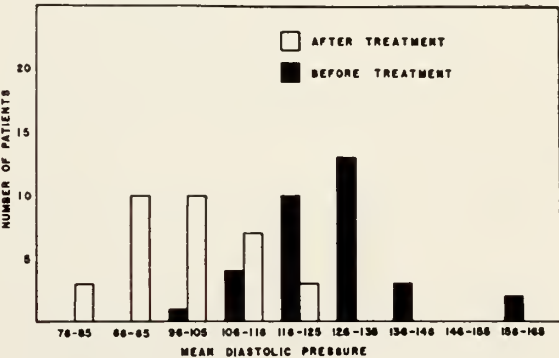


Fig. 7. Distribution of mean diastolic blood pressures of 33 hypertensive patients before and after treatment with hexamethonium and Apresoline.

The distribution of mean diastolic blood pressures for the group prior to and following treatment is shown in Figure 7.

**Headaches:** Thirteen of the patients suffered from headaches of the hypertensive type, all of whom showed considerable improvement or complete relief after beginning therapy.

**Cardiac Status:** Two patients had clinical evidence of angina pectoris before beginning therapy. After treatment one of these individuals experienced marked relief of symptoms after her blood pressure declined. The other patient continued to have attacks of chest pain on exertion, although the episodes were less frequent and less severe. No anginal type syndrome developed

during the treatment regimen in other patients, although, no doubt, some of these individuals had coronary insufficiency of varying degree. In addition, no other cardiac symptoms occurred after the blood pressure levels declined.

Six of the patients under treatment had had episodes of congestive failure, four of whom were being maintained on digitalis at the time of institution of therapy. Most of these patients had responded to regimens used to treat congestive heart failure before receiving the hypotensive drug therapy. However, one patient had been under treatment for congestive failure for three years, and, despite salt restriction, diuretics, and digitalis, compensation was difficult to maintain. After reduction of her blood pressure by these hypotensive drugs she became compensated and is now able to perform moderate house work.

*Ocular Fundi:* The ocular fundi of the patient with a diagnosis of malignant hypertension showed hemorrhages, exudates, and papilledema. After therapy these findings regressed. Small white scars at the sites of the hemorrhages were the only residue. Changes present in the vessel walls generally did not show any improvement after therapy.

*Age:* Sixteen of the patients were 50 years of age or older, 17 being under 50. Both groups responded to therapy well, but, as would be expected, a larger percentage of the younger group more readily became normotensive and remained so. This was, no doubt, due to the irreversible changes that had occurred in the blood vessels of the older age group.

*Renal Hypertension:* The three patients with renal hypertension all had a clinical diagnosis of chronic pyelonephritis. The response to therapy in these patients was excellent, two becoming normotensive, and the third was readily maintained at only slightly hypertensive levels.

#### TOXIC EFFECTS AND SIDE REACTIONS

Untoward symptoms produced by hexamethonium were the results of either excessive sympathetic or of parasympathetic blocking action. Soon after beginning therapy many patients noted some weakness or lassitude, which they described as a feeling of dizziness, drunkenness, or feeling "dopey." This was usually relieved by assuming the reclining position and disappeared entirely as the therapy was contin-

ued. A majority of the patients at some time during the treatment had symptoms of postural hypotension. These episodes usually began about one hour after the ingestion of the drug and were relieved promptly by sitting or lying down. Such episodes of postural hypotension usually cleared entirely as treatment was continued and especially after the blood pressure became stabilized at a lower level. On the other hand, episodes of dizziness that were of prolonged duration usually continued and were considered a sign of overdosage, and the patients were instructed to omit part or all of the next dose of the hexamethonium.

Lowering of blood pressure was well tolerated by all the patients who showed hypotensive response to the drugs. As mentioned previously, there was no incidence of aggravation of angina pectoris or the occurrence of coronary occlusion in any of our patients. Although four of the thirty-three patients had had episodes of cerebrovascular thromboses prior to hypotensive therapy, there was no recurrence or aggravation of these symptoms noted during the period of this study.

Parasympatholytic effects were noted in most of the patients. The most common occurrence was that of persistent constipation. This was relieved by the use of laxatives. Those found most effective were milk of magnesia, magnesium sulfate, or cascara sagrada administered at regular intervals. More severe incidences of this side reaction usually benefited by bethanechol (Urecholine\*) chloride administered in doses of 5 to 10 milligrams three or four times per day. Six of the patients receiving the hypotensive drugs experienced difficulty in micturition and one required catheterization. In all such patients, however, the administration of Urecholine relieved the symptoms. The drug was given for two or three days and discontinued. The symptoms usually did not recur. Two patients complained of loss of potentia, and received some symptomatic relief by taking 5 to 10 milligrams of Urecholine, administered sublingually just before retiring. Four of the patients receiving these drugs complained of blurring of close vision and two complained of dryness of the mouth. All of these symptoms were of mild nature and usually transitory.

\*Trade name, Merck and Company. This drug was furnished through the courtesy of Merck and Company, Rahway, New Jersey.

Hydrazinophthalazine (Apresoline) acts as an antihistaminase<sup>11</sup> and the side effects are similar to the effects of histamine. Four of the patients treated with this drug developed a throbbing headache after beginning therapy. In two, this subsided on continued therapy, but the other two were forced to discontinue the drug. Other symptoms attributed to this drug were tachycardia, with palpitation in one, nasal stuffiness in one, and tinnitus in two instances. Administration of antihistamines provided no relief.

#### COMMENT

Our results indicate that hypertensive patients can be safely treated with hexamethonium and hydrazinophthalazine on an outpatient basis for prolonged periods of time. This treatment in no way effects a cure of the underlying pathologic process, and patients in whom therapy is discontinued for even a short period of time have a rapid return of the blood pressure to pretreatment levels. Because of the potent hypotensive effects of these drugs, their use entails the responsibility of continued management at regular intervals.

Reduction of the blood pressure to near normal levels will usually provide relief of symptoms resulting from the hypertension, per se, and we believe will diminish the rate of progression of the secondary pathologic changes. In addition, by reducing the work load on the failing heart,<sup>12</sup> it may make compensation easier to maintain. The hazard of cerebrovascular hemorrhage may also be diminished.

Because of an occasional sensitivity to the effects of the drugs, treatment should be first instituted with only one drug. Prior administration of hexamethonium diminishes the frequency of side reactions to the hydrazinophthalazine,<sup>3</sup> therefore, we recommend that the treatment regimen be instituted with hexamethonium using small doses, the amount of the drugs being increased gradually until desired effects are obtained.

Each patient must be individually "titrated" so that a suitable hypotensive effect can be secured with a minimum of hypotensive symptoms. The education of the patient, together with frequent reassurance concerning the significance of the various side re-

actions, is usually necessary. Such instruction should be instituted early and continued throughout the entire period of therapy. When therapy is begun, all patients should be cautioned about the possibility of hypotensive episodes, and reassured that these episodes will be of short duration and are rapidly relieved by lying down. These individuals should also be instructed to use a mild laxative, such as milk of magnesia or cascara sagrada, as often as necessary to maintain normal bowel habits. Most patients have experienced one or more episodes of postural hypotension after being started on this drug therapy. These occur mainly before adequate maintenance dose is determined. These individuals should be instructed that, if they begin having prolonged dizzy or weak spells lasting four to five hours, the amount of hexamethonium should be decreased by one-half to one tablet with the next dose, continuing the hydrazinophthalazine at the previous level. Once the blood pressure has stabilized at an arbitrarily satisfactory level, we then usually allow our patients to return for follow-up at monthly intervals. After stabilization there usually is only small or minor variation in the dosage required to maintain adequate hypotensive effect. All of our patients are as active as they were prior to therapy. Several have resumed part of their normal activities that they previously had to forego.

The indications for this type of therapy have not yet been well defined. Certainly, it would be of greatest benefit in the treatment of conditions caused directly by elevation of blood pressure. Hypertensive encephalopathy, severe hypertensive retinopathy, cardiac hypertrophy and strain are obvious indications in the absence of renal insufficiency. It is questionable if a mild hypertension in an otherwise well compensated individual of middle age is adequate indication for initiation of a potentially dangerous, not inexpensive regimen of management of a syndrome that gives him a minimum of difficulty. Early results so far are encouraging, but it remains for long term follow-up studies before a proper evaluation of these drugs in this type of therapy can be undertaken.

#### SUMMARY AND CONCLUSIONS

Thirty-three patients with chronic arterial hypertension were treated with oral hexamethonium chloride and 1-hydrazin-

11. Meier, R.: Cited by Schroeder.<sup>3</sup>

12. Kelley, R. T.; Freis, E. D., and Higgins, T. F.: The Effects of Hexamethonium on Certain Manifestations of Congestive Heart Failure.

ophthalazine on an outpatient basis for periods ranging from 9 to 37 weeks.

Twenty-six of the 33 patients had a decrease in the mean diastolic pressure of 20 mm. of mercury or greater.

Nine patients were maintained at normotensive levels; fourteen at slightly hypertensive levels; and six of the remaining 10

at moderate hypertensive levels that were distinctly lower (average 24 mm. decrease in diastolic) than pretreatment controls.

The method represents a practical way of controlling hypertension in ambulatory patients, but in no sense is it a "cure." Long term results cannot be evaluated until much more time has elapsed.

## PHEOCHROMOCYTOMA

### REPORT OF CASE IN NINE YEAR OLD NEGRO MALE

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Pheochromocytomas are chromaffin cell tumors. They may be benign or malignant. According to MacKeith (Cahill)<sup>1</sup> 9 per cent of these tumors are malignant and 9.7 per cent are multiple tumors. Maier<sup>2</sup> states that 15% of adrenal pheochromocytomas are bilateral. In Graham's<sup>3</sup> cases about 10 per cent were bilateral. In a small number of cases neurofibromatosis has been reported associated.<sup>4</sup> The malignant chromaffin cell carcinomata tend to metastasize early and extensively.<sup>5</sup> The malignant tumors frequently do not produce hypertension. The chromaffin tumors may arise either from the medullary tissue of the adrenals or from chromaffin tissue located elsewhere in the body, such as the paraganglia alongside the ganglia of the sympathetic nervous system, the organs of Zuckerkandl on either side of the aorta, and the carotid bodies. Maier<sup>2</sup> reported successfully removing one intrathoracic tumor. Cahill<sup>1</sup> reports two other intrathoracic and one intracranial tumor. Maier<sup>2</sup> estimates 12 per cent of the tumors are outside the adrenal area. The

pressor substance at work during hypertensive crises was identified as adrenalin by Beer, King, and Prinzmetal.<sup>6</sup> Goldenburg and associates (from Kepler and Locke)<sup>7</sup> found, of the total epinephrine in 3 pheochromocytomas, 53 to 90 per cent was nor-epinephrine. Beyer et al.<sup>8</sup> state that the preponderance of present evidence indicates that epinephrine is formed directly by transmethylation of nor-epinephrine and that this can occur in the adrenal medulla. These authors indicate that there is an impairment of the transmethylation reaction in the pheochromocytoma.

*Incidence:* The syndrome of paroxysmal hypertension associated with adrenal medullary tumors was first clearly described by Labbe, Tincl and Doumer in 1922, in France.<sup>9</sup> According to Fingerland<sup>10</sup> the first anatomic and histologic description of the tumors was made in 1896. In 4500 autopsies he reported finding two tumors of this type.

Read before the Association in annual session, Birmingham, April 16, 1953.

1. Cahill, Geo. F.: Pheochromocytoma, J. A. M. A. 138: 180, Sept. 18, 1948.

2. Maier, Herbert C.: Intrathoracic Pheochromocytoma with Hypertension, Ann. Surg. 130: 1059, 1949.

3. Graham, John B.: Pheochromocytoma and Hypertension, Analysis of 207 Cases, Surg., Gynec. & Obst. 92: 105, 1951.

4. Glushien, Arthur S.; Mansuy, Matthew M. and Littman, Donald S.: Pheochromocytoma. Its Relationship to the Neurocutaneous Syndromes, Am. J. Med. 14: 318, 1953.

5. Soffer, Louis J.: Diseases of the Endocrine Glands, Lea and Febiger, Philadelphia, 1951.

6. Beer, E.; King, F. H., and Prinzmetal, M.: Pheochromocytoma with Demonstration of Pressor (Adrenalin) Substance in the Blood Preoperatively During Hypertensive Crises, Ann. Surg. 106: 85, 1937.

7. Kepler, Edwin J., and Locke, Wm.: Chronic Adrenal Hyperfunction, Williams Textbook of Endocrinology, W. B. Saunders Co., Philadelphia, 1950.

8. Beyer, Karl H.; Ross, Charles O.; Wiebelhaus, Virgil D.; Waller, William S., and Schuchardt, Grace S.: Vasopressor Components of Pheochromocytoma, Ann. Int. Med. 35: 117, 1951.

9. Evans, Willis F., and Stewart, Harold J.: The Peripheral Blood Flow in a Case of Adrenal Pheochromocytoma Before and After Operation, Am. Heart J. 24: 835, 1942.

10. Fingerland, A.: Two Cases of Pheochromocytoma, Virchows Archiv Vur pathologische Anatomie und Physiologie und fur klinische Medizin 309: 218, 1942.

Smithwick<sup>11</sup> found pheochromocytomas in 0.47 per cent (8 times in 1700 cases) of patients operated on with the intent of doing sympathectomies. Since this was a highly selected group of patients this figure cannot be taken as a true index of the incidence. Snyder and Vick<sup>12</sup> reviewed the literature up to 1945 and "found only 84 cases of proved pheochromocytoma in which there is convincing evidence of hyperadrenalinemia." These authors quote MacKeith as finding 165 cases of pheochromocytoma reported in the literature up to 1944. They state many of these were incidental findings at autopsy, with no history of hypertension. Graham<sup>3</sup> in 1951 published an analysis of 207 cases associated with hypertension. Of these, 198 were collected from the world literature up to the middle of 1949. Nine cases were his own. He reports that he had encountered, in addition to these, reports of 41 cases of tumors with inadequate clinical data and 32 cases of neoplasms without hypertension. From his analysis he estimates that more than 800 persons die yearly from pheochromocytomas. According to Maier<sup>2</sup> one-half of the recorded cases are incidental to autopsy findings. He further reports that one-half of the recorded cases are under 40 years of age. In Graham's<sup>3</sup> analysis approximately 57 per cent were under 40. The age incidence in this series ranged from 5 months to 72 years. The usual age incidence is 20 to 40 years. Snyder and Vick<sup>12</sup> report 6 cases (actually 7, one being one of Cahill's<sup>1</sup> cases) in children under 12 years of age up to 1947. Litman and State<sup>13</sup> in 1949 state that 8 cases of pheochromocytoma in children under 13 have been reported but do not list the cases. They had one case of their own in an eleven year old girl. These are apparently the seven cases reported by Snyder and Vick plus their one case. In addition to these I was able to find in the American literature 7 additional cases in children under 13 years of age since 1947. Grimson et al.<sup>13\*</sup> reported a Negro boy age

10, Cahill<sup>1</sup> one girl age 12,\* one girl age 10, and one boy age 11; Iseri et al.<sup>14</sup> one Negro boy age 8, and McCoy and Bridgeman<sup>15</sup> one boy age 13. One child, age 7, is mentioned by Soffer<sup>5</sup> in his textbook. The case reported herein makes a total of 15 cases of pheochromocytoma in children age 13 years and under associated with hypertension. The following cases are not included in this series of 15 cases for the reasons indicated:

(1) Calkins et al.<sup>16</sup> reported a 7 year old girl in whom the pathological report was "large cell neuroblastoma." No pressor substance could be demonstrated in the tumor. The chief presenting symptoms were weight loss and sweating. Hypertension was present.

(2) Koffler et al.<sup>17</sup> reported a case in a colored male who was first seen at the age of 12, but inasmuch as the diagnosis was made at age 15 the case is excluded. Presenting symptoms were headache, vomiting, and diminished visual acuity.

(3) Evans and Stewart<sup>9</sup> reported a colored girl whose chief complaints were weakness and sweating. This case is not included since the patient was 14 years of age.

#### CASE REPORT

R. E. I., a 9 year old colored male, was admitted to the hospital complaining of a cough of 3 to 4 weeks duration, and frequency of urination. For about one month he had been having bouts of weakness and sweating. He was also quite constipated

\*Apparently the same case that was reported by Ganem and Cahill.<sup>18</sup>

14. Iseri, Lloyd T.; Henderson, Hugh W., and Derr, John William: Use of Adrenolytic Drug, Regitine, in Pheochromocytoma, *Am. Heart J.* 42: 129, 1951.

15. McCoy, G. E., and Bridgeman, M. L.: Drugs in the Diagnosis and Treatment of Pheochromocytoma, Case Report, *Pediatrics* 6: 286, 1950.

16. Calkins, Evans; Dana, George W.; Seed, John C., and Howard, John E.: On Piperidylmethyl-Benzodioxane, Hypertension, and Pheochromocytoma, *J. Clin. Endocrinol.* 10: 1, 1950.

17. Koffler, Irving; Buck, Gray; Wingard, Christian; Hitchcock, Philip; Guthrie, Robert, and Teague, R. S.: A Case of Pheochromocytoma: Diagnosis by the Benzodioxane Test, Urinary Hormone Studies, and Nor-Epinephrine Assay of the Tumor, *J. Clin. Endocrinol.* 10: 897, 1950.

18. Ganem, E. J., and Cahill, G. F.: Pheochromocytoma Co-Existing in Adrenal Gland and Retroperitoneal Space, With Sustained Hypertension, *New England J. Med.* 238: 692, 1948.

11. Smithwick, R. H.: Surgical Treatment of Hypertension, *Am. J. Med.* 4: 744, 1948.

12. Snyder, C. Harrison, and Vick, Edward H.: Hypertension in Children Caused by Pheochromocytoma, *Am. J. Dis. Child.* 73: 581, 1947.

13. Litman, Neil N., and State, David: Pheochromocytoma, *Pediatrics* 4: 735, 1949.

13.\* Grimson, K. S.; Longina, F. H.; Kernodle, C. E., and O'Rear, H. B.: Treatment of a Patient with Pheochromocytoma, *J. A. M. A.* 140: 1273, Aug. 20, 1949.

and this had become progressively worse. The cough became increasingly severe until his parents took him to the family doctor for treatment.

The past history was negative. He had had none of the usual childhood diseases. The family history was negative.

On physical examination the patient appeared to be acutely and chronically ill. Numerous scars were noted on the legs and abdomen. The blood pressure was 140/120 in the right arm. The mean temperature was 98° (F). The pulse rate was 120. The eyes, ears, nose and throat were essentially negative. Examination of the heart showed the PMI to be in the 6th left intercostal space. No murmurs were noted and the rhythm was regular. The lungs were resonant and clear. The abdomen was large and appeared quite distended. A fluid wave was thought to be detected. The liver was 2 finger-breadths below the costal margin. Edema was not noted.

The admitting urinalysis showed a specific gravity of 1.026 and acid reaction; it was otherwise negative. The admitting blood count showed a Hgb. of 84%, 4,090,000 red cells, 15,950 white cells, with a normal differential. The BUN was 13 mgm.%. The blood Kahn was negative. A throat culture showed streptococci and staphylococci. Two blood cultures were negative. The febrile agglutinations were negative.

The admitting electrocardiograms showed a sinus tachycardia with auricular and ventricular rates of 170, and a marked left axis deviation. P<sub>1</sub> was notched. T<sub>1</sub> was inverted to diphasic and T<sub>2</sub> was low. The S-T segments of lead I were flattened. In the precordial leads CF<sub>6</sub> showed a low T wave. The electrocardiogram was not diagnostic but was interpreted as myocardial disease. Chest x-ray on admission showed cardiovascular disease with generalized enlargement of all chambers of the heart. The most prominent enlargement was noted in the left ventricle. Noted incidentally was a diverticulum of the esophagus.

The working diagnosis was an upper respiratory infection with a possible nephritis. The patient was placed on supportive treatment, sedation, and a salt poor diet. Digitalization with Cedilanid was begun and he was given penicillin 50,000 units every 4 hours because of the elevation of temperature.

During the course in the hospital the blood pressure ran from a low of 110/90 to a high of 170/140 with a mean blood pressure of approximately 140/120.

Temperature during the admission varied up to 102.6 (F). The pulse rate was completely out of proportion to the fever. Constipation became a serious problem. Enemas gave poor results and also seemed to produce elevation of the blood pressure. Repeated doses of Epsom salt did not produce the desired results. An adrenal tumor was suspected at this time but due to the patient's restlessness, severe constipation, and distended abdomen, with resultant fluctuation in his blood pressure, it was not thought feasible to use benzodioxane as a diagnostic procedure with any degree of accuracy. An intravenous pyelogram was attempted, but it became obvious that such would be impossible due to the marked fecal impaction and multiple fluid levels noted on the preliminary film. Signs of intestinal obstruction appeared. At this time an enema under pressure was given and the impaction was finally broken loose. Following this, bigeminy developed, the pulse slowed and pulmonary edema developed. The congestive heart failure did not respond to mercurial diuretics, digitalis, and oxygen. The patient expired and an autopsy was done.

#### AUTOPSY REPORT

##### *Gross Description:*

The neck, spleen, kidneys and pancreas were negative. The spleen weighed 60 grams.

*Lungs:* Except for moderate congestion at the bases, the lungs were negative. However, about 400 cc. of clear fluid was present in the pleural spaces.

*Heart:* The heart was greatly enlarged, filling about three-fourths of the transverse diameter of the thorax. It weighed 215 grams. Hypertrophy of all areas was noted. The valve leaflets were thin and delicate.

*Liver:* The liver was moderately congested. The parenchyma showed normal lobulation and was friable in consistency.

*Adrenal Glands:* The left adrenal gland measured 3 cm. in length, and attached along its upper and mesial surfaces was a lobulated mass 4 cm. in diameter, firm and resilient in consistency. On cut section the tissue was pink-yellow in color, with defi-

nite bright yellow areas, lobulated in contour, and partly encapsulated. The mass appeared fixed to and part of the medullary substance of the adrenal gland. The right adrenal measured 8 x 4 x 3 cm., was smoothly encapsulated, and on section showed changes similar to those noted on the left. An area of hemorrhage, about 3 cm. in diameter, lay along the upper pole.

*Gastro-Intestinal Tract:* The large bowel was markedly distended by fecal material and measured about 8 cm. in diameter in the cecum. The remainder of the gastro-intestinal tract was normal.

*Microscopic Description:*

The lungs, spleen, liver and kidneys were negative.

*Heart:* Sections showed hypertrophy of the myocardial fibers but was not otherwise remarkable.

*Adrenal Glands:* The adrenal glands showed extensive disruption and replacement by a neoplastic process the size of which was often large, and stained with marked variation in size and shape of the nuclei. Mitotic figures were common. The cells grew singly or in clusters and were margined in groups by delicate connective tissues strands or supporting stroma. Abundant necrosis and hemorrhage were present. The tumor showed little capacity for infiltration and appeared to compress the contiguous tissues.

DISCUSSION OF CASE:

This case is unusual from several aspects. Severe constipation was probably the outstanding symptom. In fact, constipation was so severe it was impossible to perform any of the tests for detection of a pheochromocytoma. The tumors may have been seen on the kidney x-rays had it been possible to clean out the intestinal tract. The constipation ultimately produced all the signs and symptoms of intestinal obstruction. This case falls into the small group of cases in which hypertension is associated with a malignant pheochromocytoma (11% according to Graham).<sup>3</sup> It is obvious that the enemas produced an outpouring of adrenalin which increased the constipation as well as the strain on the heart and this eventually led to congestive heart failure. Weakness and sweating were prominent symptoms.

In view of the pharmacology of adrenalin it is surprising that constipation is not more

often reported as a complaint in pheochromocytoma. Quoting from Goodman and Gilman:<sup>19</sup> "The musculature of the gastro-intestinal tract is relaxed by epinephrine. . . . Intestinal tone is diminished and the frequency and amplitude of peristaltic waves are decreased. . . . The effects of epinephrine on the alimentary canal have no therapeutic applications because they are elicited only by doses which cause marked cardiovascular response." Certainly the outpouring of adrenalin as produced by a pheochromocytoma, especially during paroxysms, should be able to produce the above described effect, and, indeed, in the case here-in reported obviously did.

REVIEW OF THE LITERATURE

Of the 14 cases reviewed in children, the presenting symptoms are varied, the commonest being excessive sweating. This symptom was prominent in 9 cases. Paroxysmal hypertension was described in only one. Severe constipation was not described in any of the reviewed cases. Graham<sup>3</sup> noted constipation in two cases of the 207 he reviewed. Other presenting complaints were visual disturbances in 4, headache in 3, weakness in 4, and nervousness.

In the 84 cases reviewed<sup>12</sup> up to 1945, paroxysmal hypertension was found in 52, constant hypertension in 15, and paroxysms with an elevated blood pressure between paroxysms in 14. In Graham's<sup>3</sup> analysis approximately 70 per cent had paroxysmal hypertension recorded.

DIAGNOSIS

The diagnosis depends primarily on suspecting the tumor. There is no typical picture. When one sees hypertension in children the conditions that commonly come to mind are glomerulonephritis, unilateral kidney disease, lead poisoning, acrodynia, Cushing's syndrome, coarctation of the aorta, hyperthyroidism, tumors of the hypothalamus, and essential hypertension. In pheochromocytoma one may expect an elevated basal metabolism. Hyperglycemia, hyperkalemia, and elevated blood urea nitrogen may be found during the attack. Sugar, albumin, red blood cells and casts may be found in the urine. X-ray demonstration of a tumor in the adrenal area is

19. Goodman, Louis, and Gilman, Alfred: *The Pharmacological Basis of Therapeutics*, The Macmillan Company, New York, 1949.

very helpful. The electrocardiogram is not diagnostic.

The drugs used in the diagnosis of pheochromocytoma are of two classes: those that induce an attack and those that reduce the blood pressure. These will be only briefly mentioned. Attacks may be induced by histamine, tetraethyl ammonium bromide or mecholyl chloride. A significant rise in blood pressure induced by one of these drugs must exceed the rise produced by the cold pressor test<sup>20</sup> and must be accompanied by the production of the clinical symptoms described by the patient. Persistent hypertension may be lowered by benzodioxane, Regitine (Ciba), and dibenamine hydrochloride. Excellent discussions of these drugs and their use are available.<sup>19, 20, 21</sup> An attack may also be induced by massaging the tumor. Snyder and Vick<sup>12</sup> reported a palpable tumor in 10 of 84 cases reviewed (about 12%), and Graham<sup>3</sup> in 14 per cent.

In addition to the cardiovascular syndrome produced by pheochromocytoma two other entities are recognized:<sup>22</sup> (1) a chronic diabetes-like syndrome and (2) a chronic

hypermetabolic state, resembling ordinary hyperthyroidism.

#### SUMMARY AND CONCLUSIONS

1. A case of bilateral, malignant pheochromocytoma with hypertension in an 8 year old Negro male is reported.
2. Fourteen other cases were found in the American literature.
3. Severe constipation was the most troublesome symptom in the reported case. None of the other reported cases mentioned constipation as an outstanding symptom.
4. In all cases of hypertension, both in children and in adults, pheochromocytoma should be considered in the differential diagnosis.

20. Evans, James A.; Rubitsky, Hyman J.; Bartels, Carl C., and Bartels, Elmer C.: Re-Evaluation of the Reliability of Pharmacologic and Cold Pressor Studies in Hypertension and Pheochromocytoma, *Am. J. Med.* 11: 448, 1951.

21. Entwisle, George; Stone, Clement A., and Loew, Earl R.: Pharmacologic Basis of Various Tests Used in the Diagnosis of Pheochromocytoma, *Am. J. Med.* 11: 461, 1951.

## HYPERSENSITIVITY TO GAMMA GLOBULIN

### A CASE REPORT

W. J. B. OWINGS, M. D.

Brent, Alabama

#### HISTORY OF EXPOSURE

On June 11, 1953, some schoolmates attended classes from 8:30 A. M. until 11 A. M. They played checkers and other games from 11 until noon, then went swimming until 1:00 P. M.

Before midnight, one of these playmates, a white female, age nine, became desperately ill. She complained of difficulty in swallowing, and had a very high fever; was referred to the Jefferson-Hillman Poliomyelitis Clinic, where poliomyelitis was diagnosed. Shortly after admission, she became cyanotic and was given oxygen, gradually grew worse, and expired the next day.

#### CASE REPORT

One week later, a contact of the above mentioned case, D. S., a nine year old white female, came in for gamma globulin. In spite of no history of any previous blood

transfusions, nor any shots containing human serum, a skin test for sensitivity was performed by using 0.1 cc. of 1:100 gamma globulin injected intradermally. Within one minute the patient became very pale and went into anaphylactic shock. Some nausea was present, but no vomiting; there was a generalized itching over the entire body, and a very violent reaction at the site of injection. At the first sign of anaphylaxis 50 mg. of Benadryl and 1 cc. of 1:1000 epinephrine hydrochloride were given, and repeated in 30 minutes. Before the first thirty minutes had elapsed, the urticarial wheal at the site of injection on the volar surface of the forearm had increased to about 10 cm. in diameter. After the administration of the second treatment of Benadryl, some relief was obtained from the itching. However, it was twelve hours before most of the urticarial rash subsided.

When the mother was told that the child had shown a most severe and unusual reaction to human serum, she made a very cautious and thorough survey of all the immunizations the patient had received, and thought she recalled that this child might have had a measles shot several years before. By checking the immunization records at the local health department, it was found that she had received a measles shot in 1945.

**SUMMARY AND CONCLUSIONS**

After consultation with a pediatrician and other professional friends, it was concluded that this child's life would have been seriously endangered by the serum reaction if she had received the 11.5 cc. of gamma globulin necessary to protect her from poliomyelitis. Therefore gamma globulin was not administered to this contact of poliomyelitis.

It takes only a few minutes to perform a simple skin test to determine sensitivity to gamma globulin, and it is worth waiting the extra minutes in order to be sure that the patient can tolerate human serum. A negative skin test, however, will not rule out the likelihood of a delayed reaction.

Since this was the most severe and immediate reaction ever observed by the author, it is urged that a routine skin test be made on all subjects before the administration of any type of immunization containing human serum.

**PEDIATRIC CASE REPORTS**

Edited by  
**AMOS C. GIPSON, M. D.**  
Gadsden, Alabama

Presented by  
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1. K. L., a 3 year old white female resident of Homewood, Alabama, was well until the morning of June 24, 1953 when it was noted by her parents that she could not stand when she was taken out of the bed and put on the floor. She did not walk for the rest of the day and refused food and fluids. There were no other constitutional symptoms such as fever, headache, pain or vomiting. The family lives in a wooded area but has no dogs.

Physical examination revealed a well developed, well nourished, 3 year old white female, slightly lethargic but not acutely ill. She could not stand alone or walk. There were numerous infected insect bites over both lower extremities. Ears, eyes, nose and throat were negative; there was no neck or back stiffness. The lungs were clear to percussion and auscultation, the heart was physiologic and the abdomen negative. There was weakness of both lower extremities with absence of deep tendon reflexes. There was no other muscle weakness and no other neurologic abnormality.

The child's head was searched for ticks by three different persons and none found. She was admitted to the poliomyelitis service of the Jefferson-Hillman Hospital, and a spinal tap was done which was normal. The next morning the child had developed bilateral weakness of the upper extremities with absence of deep tendon reflexes. There was no respiratory difficulty.

While combing the child's hair that morning the nurse found a large engorged tick in the mid-occipital region which she removed intact. Within twelve hours after removal the child had regained full use of the extremities, with return of the deep tendon reflexes, and she was discharged the following day with a final diagnosis of tick paralysis.

2. P. R. E., a 5 year old white female, was well until June 29, 1953 when she got out of bed to go to the bathroom and fell to the floor. In a few minutes she stood without difficulty and seemed to be all right the rest of the day but complained of weakness in her legs.

The following morning she was again unable to stand and continued to have difficulty using her legs. She had no other constitutional symptoms such as headache, fever, pain or vomiting. The child lived in the country near Jemison, Alabama, and the family had a large number of dogs. She was referred to Jefferson-Hillman Hospital with a diagnosis of poliomyelitis.

Physical examination revealed a well nourished, well developed 5 year old white female in no acute distress who walked, when supported, with a stumbling gait. Examination of eyes, ears, nose and throat was negative. The neck and back were not stiff. The lungs were clear to percussion and auscultation, the heart was physiologic, the ab-

domen negative. There was bilateral weakness of both lower extremities with absence of all deep tendon reflexes. No other muscle weakness or neurologic abnormalities were found.

In the course of the examination in the Jefferson Emergency Room a large tick was removed from the lower mid-occipital region by spraying with ethyl chloride and then removing it.

The child was admitted to the hospital for observation and within eight hours had regained full strength in her lower extremities with return of the deep tendon reflexes.

She was discharged the following day with the final diagnosis of tick paralysis.

#### COMMENT

In both cases the ticks were identified as being gravid females of the genus *Dermacentor*, but no further identification was made. The two types of *Dermacentor* prevalent in North America and chiefly responsible for causing tick paralysis are *Dermacentor andersoni*, the wood tick, and *Dermacentor variabilis*, the dog tick. The hypothesized cause of the paralysis is a neurotoxin produced by the ovary of the pregnant female tick and secreted through the salivary glands. It should be emphasized, as demonstrated by the first case, that the tick may be so small as not to be found on initial examination but after a full blood meal will attain a size large enough to be readily identified.

These cases are presented to call to the attention of the physician the occurrence of tick paralysis in Alabama. At this time of year this disease is often confused with poliomyelitis. Every attempt should be made to differentiate the two, because intact removal of the tick results in complete recovery, while paralysis of the respiratory muscles with subsequent death may occur if the tick is not removed.

Complete intact removal may be accomplished by anesthetizing the tick with chloroform, ether, or ethyl chloride, or the tick may drop off if a lighted cigarette is held to its posterior aspect. There has been a great deal of literature written on this subject, and readers are referred to it for further discussion.

**Management of Otitis Media**—If one rejects the management of primary otitis media by antibiotics, what policy is to be followed? I suggest that we return to the following first principles, beginning with the proviso that the physician who undertakes to treat middle ear disease must have a practical working knowledge of the anatomy of the ear and the anatomy of adjacent structures in the infant, the child and the adult. As Rutherford says, in a particularly excellent article on this subject, the use of antibiotics has become so widespread that many young physicians actually have not been taught the art of cleansing the aural canal, of identifying pathologic changes in the tympanum, of distinguishing between suppurative and nonsuppurative disease, and of performing myringotomy when it is indicated. From personal experience I can testify to the damage heavy-handed physicians can accomplish in the mere act of cleansing the aural canal.

Treatment begins with cleansing the external ear of cerumen and debris, to permit an initial examination of the tympanum. The canal must be kept clean thereafter and open for inspection until the normal physiologic state is restored.

Pain is controlled by aspirin, codeine, or some similar agent, depending upon the necessities of the special case. Heat or cold may be used, depending upon which gives more relief. Neither has any effect on the pathologic process.

Ear drops are not indicated. If they are effective enough to control pain, they are likely to disguise the severity of the infection. This holds for both the old-time phenol and glycerine instillations and the modern proprietary preparations. If an ear is painful enough to require local applications, the indication is even stronger to suspect exudation and to arrange for inspection of the tympanic membrane by a physician capable of performing myringotomy.

In mild cases no other therapy is needed except for attention to the underlying cause of the middle ear disease, which usually is a blocked eustachian tube. If blockage is caused by an upper respiratory infection, the nose and nasopharynx must be treated to prevent reinfection through the tube, which must be kept patent, for proper ventilation of the middle ear. Direct inflation with a catheter is the procedure of choice, but it is almost impossible in very young children, in whom one must rely on the Politzer method.

The local application of nose drops is falling into disfavor, and we are relying more and more upon vasoconstrictors by mouth. Occasionally, both routes of administration must be used. If blockage of the tube is caused by an allergic rhinitis, antihistaminic therapy should be instituted. If hypertrophied adenoids are responsible, they should be removed at an appropriate time. The general health of the child with otitis media should be maintained at the highest possible level.—*McLaurin, J. Louisiana State Med. Soc., July '53.*

Many cases of pulmonary tuberculosis are either disregarded by the patient or are symptomatically latent, and even after pathological examination it is not always possible to say whether we are dealing with reinfection or reactivation.—*Blumer, Connecticut State J. Med., May '52.*

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Look to your health; and if you have it, praise God, and value it next to a good conscience.—*Izaak Walton, Think, May '53.*

**Industrial Medicine**—Too little stress has been given to the unique opportunity for cooperation which development of industrial medicine has brought to society in the field of preventive medicine. For years the ideal of prevention all too often was honored chiefly by lip service. Nevertheless, there were some notable advances. Sewage disposal and water purification, quarantine for contagious diseases, and certain efforts toward education were developed and pushed by public health authorities. Syphilis control and other efforts have been added. The public health physician today is a stout partner in the triangle of effort. The private physician is another. His value has been recognized for many years.

The third partner is the industrial physician. He has consistent, well-kept records of each employee's health picture at regular intervals through the years. These records often prove to be valuable to the private physician, whose own records are deficient because his opportunity to examine his patient comes only when the patient is ill enough to seek his advice, and this seldom occurs at regular intervals. The industrial physician keeps up to date on many conditions which may contribute to illness and about which the private physician does not know. His efforts frequently bring to light diseases which require treatment, and then the employee is advised to consult his family physician.

Many employees see their industrial physician first on almost any health problem. One reason for this is financial. They may bring their problems to him without cost. However, they will not do so if they do not have trust, confidence, and respect for that industrial physician. Another reason for seeing the industrial physician first is that since they are at work during their private doctor's usual office hours, it is easier to drop in at the industrial medical department. Nor do they have to wait a long time to see the doctor at their place of employment, which happens frequently in the private doctors' offices. A good industrial physician will see them, hear their problems, advise, and counsel, but if the illness is not industrial in origin, he will refer the patients to their family doctor for treatment.

Medical service to the American public is now a three-branched effort represented by the public health physician, the private physician, and the industrial physician. And like a three-legged stool, who is to say which is the most important leg? In our highly industrialized civilization, it is becoming increasingly difficult to decide. Cooperation on the part of all three is making it increasingly unnecessary to decide.

Recognition also should be given to the development of a body of information, skills, and techniques and the emergence of a new profession, industrial hygiene, which has advanced the cause of industrial health materially. Industrial hygienists use their instruments, knowledge, and skills to survey locations, atmospheres, and processes. They determine concentrations of chemicals and dusts and in fact, anything known or suspected of being dangerous to man or animals.—*Frank, Texas State J. Med., Aug. '53.*

**Anesthetic Accidents**—By far the greatest number of anesthetic difficulties occur during the administration of the anesthetic and particularly during the induction period. How frequently have you heard that dreaded laryngeal stridor of laryngospasm occurring with an intravenous barbiturate induction, looking down to see a cyanotic patient making violent respiratory efforts but moving no air? Laryngospasm occurs most frequently when there is pharyngeal or laryngeal stimulation due to an irritant concentration of anesthetic gases or vapors or too early introduction of an airway. It may occur with premature stimulation of the patient after the intravenous administration of the barbiturates. Laryngospasm will invariably occur with the use of the intravenous barbiturates when there is dilatation of the anus, dilatation of the vagina, periosteal stripping of a rib, or any manipulation about the neck. Intravenous barbiturates should never be used for anesthesia about the head, neck, nose or throat for fear of fatal laryngospasm unless there is an endotracheal tube in place. It is far safer and much easier on both the patient's and surgeon's coronaries to use ether insufflation anesthesia for head, neck, and oral surgery when the facilities for endotracheal intubation are not at hand.

When laryngospasm does occur, its first treatment consists of positive pressure oxygen with an anesthetic bag and mask. Intermittent positive pressure on the rebreathing bag with oxygen alone will break up the laryngospasm in most cases. When this method fails, the intravenous use of curariform drugs is recommended. When it then becomes possible to force oxygen through the spasming larynx, intermittent positive pressure should be continued until the curariform drug is metabolized. If all such measures fail, and definitely before the circulation begins to fail, an endotracheal tube should be inserted, or a tracheotomy should be performed.

Pulmonary edema occurring during the period of anesthesia is usually the result of the patient breathing against obstruction of the airway. Noisy respiration, while it informs the anesthetist of continued respiratory effort on the part of the patient, is of necessity obstructed respiration. Obstructed respiration leads to inadequate respiratory exchange with its attendant deficient oxygenation, increased carbon dioxide retention, and subsequent development of pulmonary edema. The anesthetized patient has a labile vascular system, reacting unfavorably to changes in position and particularly to the overadministration of intravenous fluids. Pulmonary edema may result from overloading of the right side of the heart with intravenous fluids, and their administration should be judicious even in a healthy patient. When given intravenously to the average patient, 500 cc. per hour can be handled without difficulty. The hypertensive patient or the one with borderline compensation can handle much less. When pulmonary edema occurs, all intravenous fluids should be stopped, the patient should be placed in the reverse Trendelenburg position, tourniquets should be applied to the extremities, and oxygen should be administered under positive pressure.—*Carron, J. Florida M. A., Aug. '53.*

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## EVALUATION OF GAMMA GLOBULIN IN POLIOMYELITIS

A nation-wide cooperative research effort to evaluate the use of gamma globulin against poliomyelitis has been launched, according to an announcement by Surgeon General Leonard A. Scheele, of the Public Health Service, U. S. Department of Health, Education, and Welfare.

The program is sponsored by the Public Health Service in collaboration with the Association of State and Territorial Health Officers, the American Physical Therapy Association, and the D. T. Watson School of Physiatrics, affiliated with the University of Pittsburgh School of Medicine. An advisory committee comprised of 17 leading authorities planned the investigation and will review its progress. The Service's Communicable Disease Center at Atlanta, Georgia, will coordinate the program.

Gamma globulin is a blood derivative which was shown in tests last year to have some temporary effects in modifying or preventing the paralysis of poliomyelitis. The primary objective of the program is to measure the extent that gamma globulin reduces the severity of paralysis in victims of the disease. Multiple case households—those in which two or more cases occur—will be chosen for special study. In addition, all cases of the disease in selected epidemic areas will be investigated.

Gamma globulin is being made available by the American Red Cross from the blood it collects and by the National Foundation for Infantile Paralysis from other, purchased stocks. The national supply of gamma globulin is being distributed by the Public Health Service, under a policy set by the Office of Defense Mobilization, to the State Health Officers, who are then responsible for its use in their own areas.

Dr. Scheele declared in announcing the program, "In view of the scope and cost to the nation of producing and distributing gamma globulin, the Public Health Service feels a great responsibility to join with state and local health authorities to obtain, on a national scale, the maximum amount of useful information about this new weapon."

In Atlanta, Dr. Alexander D. Langmuir, the Chief Epidemiologist of the Communicable Disease Center, said that a temporary organization, the National Gamma Globulin Evaluation Center, has been established

within CDC. Dr. Abraham M. Lilienfeld, Assistant Professor of Epidemiology in the Johns Hopkins School of Hygiene and Public Health and a consultant to CDC, is serving as Director of the Evaluation Center.

Dr. Langmuir stressed that the National Gamma Globulin Evaluation Center neither distributes nor administers gamma globulin but is concerned solely with evaluation of its effects. He added that it will be impossible to study all the expected multiple case households in all states, but an attempt will be made to survey as large a proportion as possible. This joint research effort will make available to the nation a wealth of knowledge about the most effective use of gamma globulin before the 1954 poliomyelitis season.

An essential feature of the program is an examination of each case in the study, from 50 to 70 days following onset of illness, by a trained physical therapist. These services are being arranged by the American Physical Therapy Association, aided by a grant from the National Foundation for Infantile Paralysis.

Thirty-four members of the professional staff of the Communicable Disease Center are devoting almost full time for the rest of the year to the gamma globulin program. The "backbone" of the evaluation organization is the Center's Epidemic Intelligence Service, a nationwide network of medical epidemiologists, 20 of whom are assigned to gamma globulin studies, along with 8 nurse-epidemiologists and 6 statisticians. All now have been assigned to specified areas or to mobile teams that will serve where needed.

"State and local health departments are making an even larger total contribution to this program than CDC," Dr. Langmuir said. "The enthusiastic response and willingness of state health authorities to join in planning and carrying out this important national program is indeed impressive."

Dr. Langmuir serves as chairman of the advisory committee, comprised of the following experts:

Miss Lucy Blair, Consultant, Professional Services, American Physical Therapy Association, New York.

Dr. John Chapman, Epidemiologist, Los Angeles City Health Department.

Dr. Roy F. Feemster, Director, Division of Communicable Diseases, Massachusetts Department of Public Health, Boston.

Dr. Thomas Francis, Jr., Professor of Epidemiology, University of Michigan School of Public Health, Ann Arbor.

Dr. D. G. Gill, State Health Officer, Alabama State Department of Public Health, Montgomery.

Dr. A. L. Gray, Director of Preventable Disease Control, Mississippi State Board of Health, Jackson.

Dr. Morris Greenberg, Epidemiologist, New York City Health Department.

Dr. William McD. Hammon, Professor of Epidemiology, University of Pittsburgh School of Public Health.

Dr. Arthur C. Hollister, Jr., Chief, Bureau of Acute Communicable Disease Control, California State Department of Public Health, Berkeley.

Dr. Robert F. Korns, Director, Bureau of Epidemiology and Communicable Disease Control, New York State Department of Health, Albany.

Dr. John R. Paul, Professor of Preventive Medicine, Yale University School of Medicine, New Haven.

Dr. John D. Porterfield, Director of Health, Ohio Department of Health, Columbus.

Dr. Albert B. Sabin, Director, Children's Hospital Research Foundation, Cincinnati.

Dr. Leonard M. Schuman, Deputy Director for Division of Preventive Medicine, Illinois Department of Public Health, Springfield.

Dr. Thomas F. Sellers, State Health Officer, Georgia Department of Public Health, Atlanta.

Dr. Jessie Wright, Medical Director, D. T. Watson School of Physiatrics, Pittsburgh.

#### **SOUTHERN AUXILIARY PLANNING STREAMLINED CONVENTION**

Mrs. Richard F. Stover, President of the Woman's Auxiliary to the Southern Medical Association, has announced that the convention to be held in Atlanta, Georgia, October 26-29 will be streamlined so that time may be given to the members for shopping, being with their husbands, and visiting with friends.

All regular meetings of the Auxiliary will be held at the Henry Grady Hotel, where there will also be a registration booth; another registration booth and exhibits will be at the Municipal Auditorium. Meetings are planned as follows: Tuesday 10 A. M. to 12 Noon, Wednesday 10 A. M. to 11:30 A. M.

Mrs. Leo J. Schaefer, President of the Woman's Auxiliary to the American Medical Association, will be guest speaker and Mrs. Stanley A. Hill, Corinth, Mississippi, will be installed as president at the Wednesday morning meeting.

A Research and Romance of Medicine luncheon or tea will be held on Tuesday.

Dr. Frank G. Slaughter, famous surgeon and novelist, will be the guest speaker. A Doctor's Day luncheon honoring two "Doctors of the Year from the South," Dr. William L. Pressly, Due West, S. C. and Dr. N. M. Travis, Jacksonville, Texas, will be held at the Atlanta Athletic Club on Wednesday at 12:15 P. M. There will be an outstanding speaker for this luncheon. All auxiliary members and their husbands are invited.

Mrs. E. A. Bancker, Chairman of the Arrangements Committee, has advised that many reservations have already been made at the hotels in Atlanta.

If you have not already done so, you should make your hotel reservations now. Address your request for reservations as follows: Bureau of Housing, Southern Medical Association, 801 Rhodes-Haverty Building, Atlanta 3, Georgia.

#### ELI LILLY CONTRIBUTES MERTHIOLATE

The appeal of an American sergeant and a Catholic chaplain in behalf of 300 Korean war orphans found a response in Indianapolis recently.

A gift shipment of tincture of Merthiolate (Thimerosal, Lilly) is on its way from Eli Lilly and Company to Father Roland C. Reny, a major in the U. S. A. F. 17th Bomb Wing, in Korea. Enough of the antiseptic is being provided to treat the wounds, cuts and abrasions of the 300 Korean children for at least a year.

The story of the needs of the Korean orphans is typical of the misery and want of 100,000 parent-less children in that unhappy land. It is to meet such needs that the American-Korean Foundation is now seeking \$150,000 in Indiana as the Hoosier share of a \$5,000,000 relief fund.

In a letter to the Indianapolis pharmaceutical house, Staff Sergeant Carl G. Hanson said Father Reny was organizing contributions of clothing and food for an orphanage set up near the K-9 Air Base in Korea, but that the antiseptic was "sorely needed" because military personnel could not spare enough.

"Please do what you can to combat this crisis," Sergeant Hanson wrote. "Our boys here through their generosity are keeping roofs over these orphans and food in their stomachs by contributions. This is a real charity, and Almighty God will bless you for it."

Ernest Lee, Indiana chairman of the American-Korean Foundation, said the problem of the Korean children who have lost their parents in the war is one of the gravest facing the rehabilitation workers.

"The attitude of Sergeant Hanson and his buddies typifies the response of American troops to the suffering they see around them," said Lee. "It is inspiring to know that our men overseas already have contributed \$20,000,000 from their military pay to Korean relief. Surely Americans at home will react in the same generous spirit."

#### AMERICAN PUBLIC HEALTH ASSOCIATION TO MEET IN NEW YORK

News of latest developments aimed at preventing disease and promoting personal and public health will be exchanged by professional workers from all parts of the free world at the 81st annual meeting of the American Public Health Association and annual sessions of 40 related organizations at the Hotels Statler and New Yorker, New York City, November 9-13.

More than 5,000 public health workers—physicians, dentists, nurses, engineers, statisticians, veterinarians, sanitarians, nutritionists, health educators, entomologists, biologists and others—are expected to attend the sessions, according to the Association's executive secretary, Dr. Reginald M. Atwater. Theme of the meetings will be "Meeting the Health Needs of the Community."

"The Association's annual meetings serve to bring to the attention of professional workers in the field of public health the latest findings and views of their fellow workers and thus to stimulate further research and development," Dr. Atwater said in announcing the plans.

"Year after year, milestone after milestone in public health progress has been recorded at these meetings as man has won battle after battle in the ceaseless war against disease," Dr. Atwater added: "At the 1952 annual meeting in Cleveland, for instance, conclusive findings were first released on the use of gamma globulin to prevent poliomyelitis. Again this year, we look forward to hearing news that will bring new hope for longer, healthier, happier life to people everywhere." Among areas in which progress reports are scheduled, ac-

according to Dr. Atwater, are further developments in use of gamma globulin for prevention of poliomyelitis, mass vaccination against influenza, fluoridation of food and water supplies, new methods of tuberculosis treatment and care, and integration of mental health in public health departments.

Sessions will be devoted to industrial hygiene and sanitation, school health programs, nutrition and dietary developments, control of animal disease, maternal and child health, accident prevention, home nursing, laboratory and engineering developments, and work with handicapped children of various types.

Highlights of the sessions will be presentation of the Sedgwick Memorial Medal for distinguished service in public health, scheduled for Wednesday evening, November 11, and presentation of the Lasker Awards for 1953 for outstanding contributions in medical research and public health administration, scheduled for Thursday afternoon, November 12.

Local arrangements for the annual meeting are being made by a committee headed by Dr. John F. Mahoney, commissioner of health of New York City, and Dr. Herman E. Hilleboe, commissioner of health of New York State.

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## THE ASSOCIATION FORUM

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

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### DRAWING THE LINE

W. A. Dozier, Jr.

Director of Public Relations

Perhaps the toughest problem one ever has to face is not the execution of a plan but the making of decisions which will determine the basic form of that plan. One must not be precipitate, yet a time comes when action must be taken. All of us face decisions every day; and once they are made, we may turn our energies to action.

A decision that we have not made in this country is one that would determine just how far we are going in the matter of looking to the great white father (Washington) for answers to our personal problems. In other words, where do we draw the line? Some people have decided; and although it takes courage, those people are speaking out. The following from the Johnson, Kansas, Pioneer is one example.

"So we are in a 'disaster.'

"The government says so, and the Eastern news writers, with their hearts bleeding for us poor, benighted, poverty stricken victims of the great desert, tell lurid stories of gaunt men, women and cattle, struggling valiantly in blizzards of dust to eke out a living for our underprivileged children.

"Hell's bells. You'd think we were down darn near to our last Cadillac.

"Of course the cattlemen are hit hard and the wheat crop is pretty generally a fizzle,

but, when fit into the traditional picture, it lacks much of being a 'disaster.' As one observer observed, 'A man driving a \$5,000 automobile does not look like a disaster.'

"In the first place the history of southwest Kansas was that two good wheat crops in five years was a very good average. Modern mechanized farming and the use of summer fallow has changed it enough that one crop failure in 13 years constitutes a disaster. That is what Stanton County has had.

"Twelve good crops have been harvested in succession—a record for this county, and better than some of the counties in the area. Those 12 crops followed a 10-year dry cycle, which also was a record, and which was a disaster.

"Crop production preceding the dry '30s had been good but market prices were disastrous before the weather was, and farmers could not conquer the drouth. Now we have 12 years of accumulated prosperity in equipment and means to use it, which we lacked in 1932. Many have irrigation for auxiliary measures.

"Cattlemen are harder hit, of course. But the designation as 'disaster' won't be of too much help to them. It means they can buy feed cheaper. But every day big trucks are hauling the alfalfa hay crops from Stanton, Hamilton and nearby counties to Texas. If feed were the big problem why are those crops not kept here to meet the needs of the local cattlemen?

"But this modern habit of looking to government to correct every wrong goes to the point of absurdity, and this 'disaster' business is the most absurd of the absurdities.

"Our people have whipped a lot of them a lot worse, and then sent cash contributions

to help out the poor devils in the flood areas back East."

This man has made his decision. He wants to draw a line. Have you decided and are you ready to say that we go only so far and no further?

## STATE DEPARTMENT OF HEALTH

### BUREAU OF ADMINISTRATION

**D. G. Gill, M. D.**

**State Health Officer**

### CHILDREN WITH IMPAIRED HEARING

**Contributed by**

**John M. Gibson, Director**

**Division of Public Health Education**

We who have normal hearing do not realize how fortunate we are. Like so many other of life's blessings, this one is taken for granted. We almost never stop to realize how different everything would be if we suffered from serious hearing defects.

Many, unfortunately, do. One who did so we know only as Mary. The Children's Bureau tells us about her.

Mary was a third-grader. She had been an above-the-average student. She rated "tops" with her young playmates. The road ahead seemed bright with promise. She would continue her excellent grades throughout high school and then go on to college. After that would come either post-graduate study or the beginning of some kind of career. Or so it seemed.

But Mary had a case of measles one winter. She seemed to have made a good recovery and went back to school. But she was frequently plagued with bad colds, which interfered with attendance. After a while her friends couldn't help noticing that she was not the same. A marked change had come over her. Her grades were nothing like as good as they had been before. She did not have the same intense interest in her studies that she had had in the past. Her teacher couldn't understand why she had to call her two or three times, or more, before she would pay any attention. That certainly was not like the Mary she and the others had known.

Other changes also began attracting attention. Mary's attitude toward her friends was different. She was no longer as pleasant-mannered and easy to get along with as she used to be. She became irritated over small things and did not hesitate to show her irritation. As this tendency became more and more pronounced, her playmates began taking a different attitude toward her. They began staying away from her and leaving her strictly alone. Motivated by her own natural inclination and their new attitude, she became more and more a "lone wolf," spending her time by herself. She naturally learned to depend less and less upon others. She became introspective. She went in for a great deal of day dreaming.

Mary's teacher became perturbed. There must be some cause for this change in attitude and in disposition. After talking to the local public health nurse, she wondered if there might not be some kind of connection between this change and the child's illness. Possibly, they suggested to each other, Mary had suffered some kind of hearing loss at that time. People, especially young people, who have suffered such losses often act about as she had been acting.

After that talk with Mary's teacher, the nurse went to see Mary's mother. She, too, had been concerned and disturbed over that change. Indeed she had been so greatly disturbed over it, she said, that she had been thinking of taking Mary to a doctor. But she had not done so.

On the nurse's recommendation, the child was taken to the doctor. That friendly man of medicine, who had been looking after Mary and the other members of the family for many years, gave her a thorough examination. At its end, he made his report: Mary still had some infection in her nose

and throat. As he said: "With her history of measles and repeated colds, Mary's hearing may be affected. That, along with being run down, could explain her behavior."

This general practitioner did not feel himself qualified to treat the youngster. That was a job for a specialist in the field of hearing. So he sent her to an otologist. While Mary's mother looked on and tried to keep her spirits up, this ear specialist gave her another examination and asked a number of questions. The examination included the ears, nose and throat. It showed that her hearing was distinctly less acute than it should have been.

Comparatively new drugs have proved as beneficial in this field of health as in others. So that otologist was able to paint an encouraging picture of Mary's prospects of regaining her hearing. He mentioned especially penicillin and the sulfa drugs, which he and other hearing specialists had used with success on cases similar to hers. Still, he was careful not to promise definitely that they would prove altogether successful in her case. But he believed they would at least benefit her greatly.

He decided to treat her with penicillin. And his optimism was justified. For her infection soon cleared up. Her hearing improved and in time returned to normal. Then Mary was Mary again. She again became popular with her playmates. Her grades shot upward to the high level she had consistently maintained prior to her illness. Naturally, she was delighted. But not more so than her parents.

Here is what a spokesman for the Children's Bureau had to say about Mary and the condition that caused her mother and father, as well as her teacher and the public health nurse, so much concern:

"Most hearing loss in children is the result of repeated colds and infections in the ears, nose and throat. It often follows measles, scarlet fever, influenza, and meningitis. When this infection is not treated early, a child's hearing may be damaged for the rest of his life. Quick attention to any infection of the ears, nose and throat will prevent most hearing loss.

"Some children lose part of their hearing because, in addition to their infection, they have large adenoids. The overgrown adenoids block up the little tubes that lead from the throat to the ears. These tubes must be open and clear for good hearing. For these children, curing infection isn't enough. Their adenoids may have to be removed. Otherwise, a permanent hearing loss may occur."

Unfortunately, even the removal of enlarged adenoids and the use of penicillin or some other drug to clear up infection do not cure all cases of impaired hearing. The tragic truth is that certain diseases may damage the nerve of hearing. Or they may even destroy it completely. Meningitis is especially dangerous from this point of view. You occasionally see youngsters like that, and also people who are no longer youngsters. For it is one of the tragedies of permanent deafness, partial or complete, that those who get it in childhood carry it with them through life.

The Children's Bureau also has told us about a case of that kind. It involved a boy named Tommy. Tommy was four years old. About seven months before he was born, his mother had a case of German measles. But she did not think much about it and took it for granted that her baby would be normal in every way. And he seemed to be at first. For he acted like a normal baby and at the usual age began talking. But after a while he stopped. Sounds came from his mouth, but they were not words that even the most devoted parents could understand. As time went on, his parents became worried. For he was still speaking as indistinctly after two years or longer as before. A horrible thought struck them: Could Tommy be mentally subnormal? But, when he was taken to a doctor for an examination, nothing indicating mental retardation could be found. The doctor said to the parents:

"It may be that he doesn't hear. Children learn to talk by hearing. Tommy thinks the sounds he makes are like those we make. It's possible the German measles his mother had during pregnancy caused him to be born with a hearing loss. This happens sometimes."

Like the doctor who first examined Mary, this one did not feel qualified to diagnose and treat hearing defects. So he recommended that Tommy's mother take him to a speech and hearing center. This center had on its staff not only an otologist but also others specializing in hearing difficulties.

The otologist found that Tommy had suffered a pretty serious hearing loss. But it was not 100 per cent. The child still could hear a little. Tommy's mother asked the natural questions—whether he would be able to learn to talk like other children. The otologist was much less optimistic than the

one who had examined Mary. Some children with no more hearing ability than he had had learned to talk, he told her. But that would take time. Tommy would require a great deal of help. And the parents would have to become reconciled to an unpleasant fact: Tommy would never hear as well as most other children. He would not hear well enough to get along on his hearing alone. He would have to learn lip-reading. He would probably find a hearing aid helpful, as it would permit him to understand words which he would otherwise miss. Then, the otologist told her, he might be able to attend school like other children. He continued:

"At least he'll have a much better chance. He may be a year or two behind his playmates because he's got so much to learn. But many children with a hearing loss like Tommy's are able to do almost everything other children can do."

When a youngster is in the condition Tommy was in, helping him to overcome his handicap is not a one-person job by any means. He needs to enlist the help, sympathy and understanding of others. That is especially true of the members of his own family. So his mother enrolled at the speech and hearing center along with him. He joined a class for hard-of-hearing children. She joined a group of other mothers whose children were handicapped as he was. One of the most important jobs she learned to do at the center was to spend hour after hour with him at home, giving him practice in lip-reading and speaking properly. That spokesman for the Children's Bureau predicted that, after two or three years of help from the center and from his mother and others, Tommy would be "a very different child." He would be better adjusted to the peculiar needs of his peculiar problem.

What is the proper age at which a child like Tommy should begin his training?

The Children's Bureau spokesman says it should begin by the age of three or four. Some hearing and speech centers even accept children as young as two.

In what ways can a parent best help a child with permanently impaired hearing? Let us turn again to that spokesman for the Children's Bureau:

"To help their child who doesn't hear, parents have to talk to him more than if he did hear. They have to remember that he has to see the

words formed by the lips. So when they speak to him, they try to be in a good light, about three feet in front and on a level with his face. At first the child doesn't get all of the meaning. But soon he begins to connect the way the lips form the words with what they are giving or showing or telling him."

Like most other states—one is tempted to say like *all* other states—Alabama is not doing as much for its hard-of-hearing as needs to be done. That applies to little girls like Mary and little boys like Tommy as well as to older people. What is being done officially is done by the Crippled Children's Service of the State Department of Education. With strictly limited funds, it is not able to do much in the way of finding youngsters whose hearing is defective. But it has received excellent help from Rotary Clubs and perhaps other civic organizations as well. With funds provided in that way, diagnostic equipment is taken into schools. And there deficient hearing has been found to be responsible for poor grades, indifference to other children, personality changes and other troubles. Treatment is furnished at a hearing clinic maintained by the Crippled Children's Service at the School for the Deaf, at Talladega. Hearing aids are also supplied there for those needing them. Youngsters requiring hospital care receive it at various hospitals. Two hundred and thirty hard-of-hearing youngsters were helped in 1952 by the Crippled Children's Service. It has expressed its appreciation of the cooperation given it by health, education and welfare agencies.

Society is gradually assuming more and more responsibility for its unfortunates. Those who have suffered this kind of misfortune would seem to have a particularly strong claim upon the sympathy, interest and help of their more fortunate friends and neighbors. As time goes on, children like Mary and Tommy will undoubtedly receive much more generous treatment from the rest of us than we have been giving them.

1954 MEETING  
OF THE ASSOCIATION  
ADMIRAL SEMMES HOTEL  
MOBILE  
APRIL 15-17

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director

SPECIMENS EXAMINED

June 1953

Examinations for diphtheria bacilli and Vincent's .....	127
Agglutination tests .....	1,207
Typhoid cultures (blood, feces and urine) .....	679
Brucella cultures .....	17
Examinations for malaria .....	271
Examinations for intestinal parasites .....	3,606
Serologic tests for syphilis (blood and spinal fluid) .....	42,173
Darkfield examinations .....	3
Examinations for gonococci .....	1,537
Examinations for tubercle bacilli .....	3,395
Examinations for meningococci .....	0
Water examinations .....	2,249
Milk and dairy products examinations .....	5,116
Examinations for Negri bodies .....	135
Miscellaneous examinations .....	1,873
Total 62,103	

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1953

	May	June	E. E.* June
Typhoid and paratyphoid fever .....	5	6	6
Undulant fever .....	2	1	2
Meningitis .....	19	13	9
Scarlet fever .....	34	22	22
Whooping cough .....	46	21	162
Diphtheria .....	7	9	11
Tetanus .....	3	0	4
Tuberculosis .....	216	216	251
Tularemia .....	2	1	1
Amebic dysentery .....	8	8	2
Malaria .....	2	2	23
Influenza .....	170	193	61
Smallpox .....	0	0	0
Measles .....	504	203	428
Poliomyelitis .....	32	103	21
Encephalitis .....	2	0	0
Chickenpox .....	282	49	75
Typhus fever .....	0	0	15
Mumps .....	319	121	121
Cancer .....	440	332	270
Pellagra .....	8	1	3
Pneumonia .....	174	102	131
Syphilis .....	207	160	1159
Chancroid .....	12	4	15
Gonorrhea .....	416	305	475
Rabies—Human cases .....	0	0	0
Positive animal heads .....	66	56	0

As reported by physicians and including deaths not reported as cases.

\*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF SANITATION

Arthur N. Beck, M. S. in S. E., Director

AUTOMATIC SIPHONS IN SEWAGE TREATMENT WORKS

Contributed by

O. G. Quenelle, B. S., M. S.  
Pub. Health Engineer

The design of sewage treatment works often includes the use of some form of dosing apparatus. The principal function of this equipment is to provide regulated flow of settled sewage to the filter beds. Since the early development of dosing equipment it has been considered essential that this equipment should operate automatically. It should provide intermittent dosing of a fixed amount at time intervals which, of course, must vary with the flow of sewage to be treated. When dosing equipment is employed in connection with a rotating distributor on top of a filter bed, it serves to provide operating head for driving the distributor, and during times of low flow it provides for uniform distribution on the filter by accumulating the small flow and releasing it in the same size doses that it releases when the flow is larger.

In time past, several types of dosing apparatus have been used with more or less success. Some of them made use of gears, ratchetts, floats, weights, etc., with various mechanical linkage which no doubt presented some difficulties in adjustment and maintenance. Obviously they were expensive and of relatively short life. There are few, if any, sewage treatment plants using this type of equipment today.

In recent years extensive use has been made of the air-lock type of dosing siphon. This type is not expensive. Its durability is very good since it is made of heavy section cast iron and has no moving parts to wear or to get out of adjustment. Operation and maintenance on this type siphon are practically nil in many installations. In fact, its apparent simplicity and the way it does a job with absolutely no effort are intriguing. A great deal of observation and experience with the automatic siphon has indicated that its simplicity has very effectively concealed its complications to the extent that many of us do not have sufficient working knowledge of it.

The siphons commonly used today come in two different shapes or designs. On first

sight the two may appear to be quite different but essentially they are the same. One shape is shown in figure 1 and the other is shown in figure 3. For the purpose of examining the make up and operation, consider figure 1. There are five parts to the

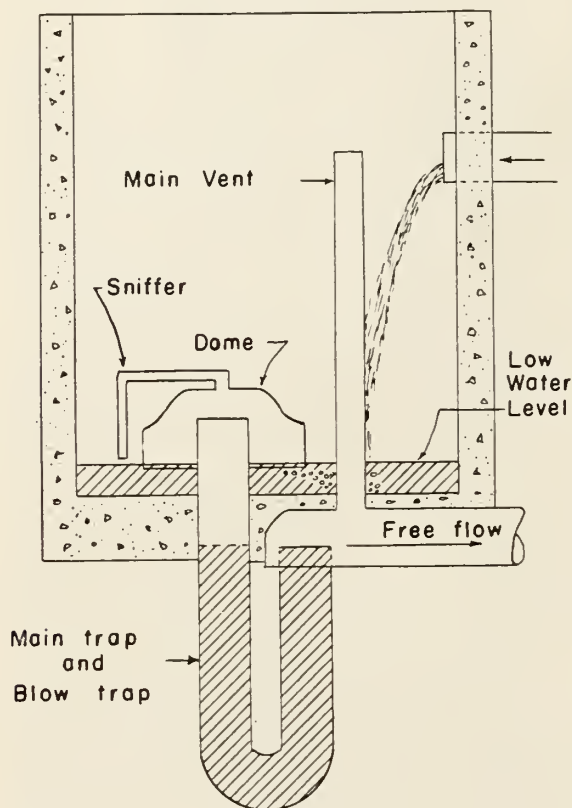


FIGURE 1

siphon and each has its specific function within the cycle of operation. These parts are: the main trap, the blow-off trap, the compression dome or bell, the dome vent or sniffer, and the large vent on the discharge. In the smaller sizes the main trap also serves as the blow-off trap; that is, the blow-off is usually but not necessarily done through the main trap.

Figure 1 shows the siphon at the beginning of a cycle of operation. The (U) tube or main trap is full to the point of overflow. Water level in the dosing tank is just below the end of the sniffer pipe and the air pressure inside of the dome is equal to the outside air pressure. When the water level rises in the dosing tank it first seals the end of the sniffer pipe. Continued rise forces water up under the air dome which in turn compresses the air over into the long leg of the main trap thus forcing the water in the long leg to move down and around the

trap to overflow the top of the short leg. When the water level in the dosing tank has reached a height above the water level inside the dome which is equal to the height of water in the short leg of the trap, as shown in figure 2, the siphon is ready to be-

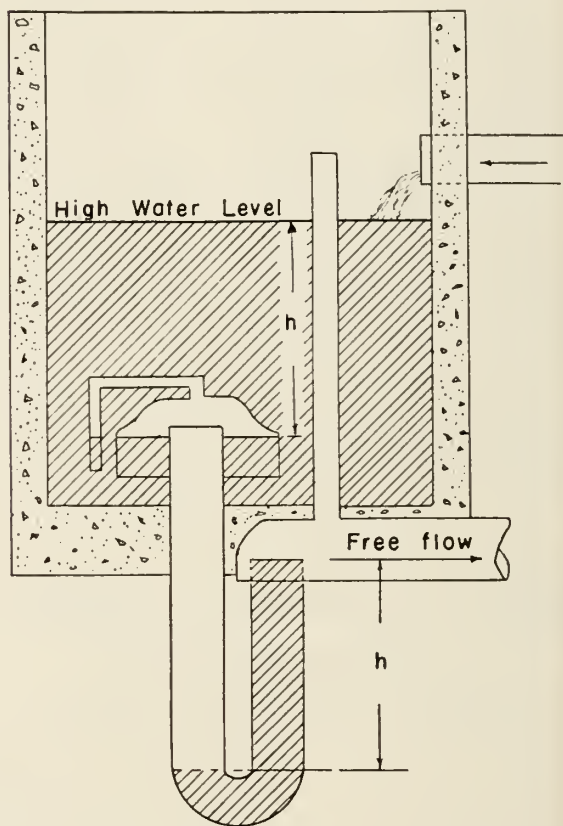


FIGURE 2

gin flowing water. A small additional rise in the tank will cause the first air bubble to break across the trap and rise in the short leg. This rising air bubble expands as it rises due to progressively less confinement and lifts a good portion of the water to overflow the top of the short leg. The balance is thus upset and most of the air remaining in the dome will blow around the main trap. This permits water to rise in the dome and follow the air around the trap. Free flow is established in a few seconds and continues until the dosing tank water level is drawn down to uncover the end of the sniffer pipe. At this point the sniffer begins taking air which enters the dome to break the siphon action. It is desirable to have the siphon action stopped slowly so the main trap will remain full of water. The large vent at the discharge end of the main trap serves to prevent any drawing or siphon action by the discharge pipe which would tend to empty

the main trap at the end of a flow. When the sniffer has completed its action of admitting air into the dome the cycle of operation is completed and everything is set, ready for the next cycle.

The principal differences in the arrangement of the two shapes of siphons are as follows: The (U) shaped main trap is used for the blow-off in siphon pipe sizes of eight inches and less diameter. This type can be operated with a separate blow-off trap like the one used on the larger siphons. The operating head can easily be reduced on the (U) shaped siphon by use of a separate blow-off trap. Of course, the upper limit or greatest operating head is fixed by the depth of the short leg of the main trap.

large ones have a main trap that extends a good many feet in width. The riser in the center of the filter bed is the short leg of this main trap. In this way the main trap also serves as the discharge pipe. The large size siphons operate exactly like the smaller ones except that the blow-off is always made through the small trap located in the large vent instead of through the main trap.

This description and explanation of siphons should be of some value in discussing the matter of operation and maintenance. If the siphon and dosing tank have been well planned and carefully installed there is very little to the operation or the maintenance. Operation consists of little more than an occasional inspection to see that the siphon

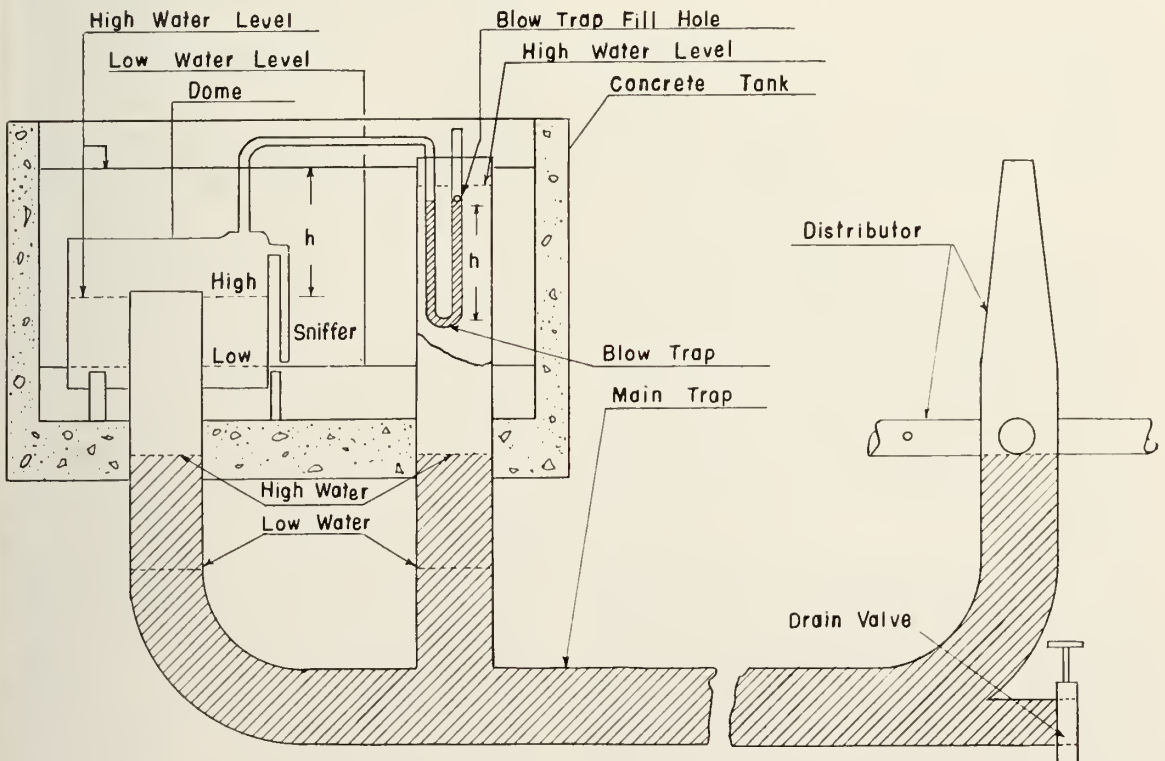


FIGURE 3

Siphons of the shape shown in figure 3 are usually found in sizes of eight inches and larger. These sizes are of more interest to people concerned with the treatment of sewage for cities. This shape siphon is usually equipped with a separate blow-off trap which is much smaller than the main trap and is located inside of the large vent pipe. The length of the short leg of this blow-off trap determines the drawing depth of the siphon. Unlike the smaller sizes the

is fully active. The blow should be sharp and clear. The draw down should be continuous. However, at the beginning of a draw the water will fall faster than during the latter part of the draw because of the decreasing head. Routine maintenance on the siphon and dosing tank consists of doing the things that are needed to keep the siphon in operation. Some cleaning and painting will be needed. If the blow trap is so arranged that it sprays sewage over the area

this can be stopped by turning the blow downward with two ells and a nipple. This will do much to keep the area clean.

Some of the things that cause a siphon to function poorly are:

1. Partly stopped blow-off trap.
2. Partly stopped sniffer pipe.
3. Partly stopped orifices in the distributor arm.
4. Inflowing sewage entraining air and carrying it under the pressure dome.
5. Pressure dome not level or otherwise traps and holds back some of the air at the blow-off.
6. Leaking or partly open drain valve in the filter bed.

An efficient grease-removing operation at the primary settling basin is very helpful in keeping the siphon operating. Grease accumulations in the blow trap and in the sniffer pipe seem to be present before the operator realizes what has happened. The piping of both of these systems should be fitted with pipe crosses and plugs as clean-outs to make easier the removal of grease accumulations. The regular removal of grease from the blow trap and the sniffer is good maintenance. The alert operator can usually tell at a glance whether the distributor orifices are fouled. Only a few of these orifices stopped will sometimes be reflected in sluggishness of the siphon. The quality of the settled sewage is not always the same.

In many installations the sewage flowing into the dosing tank impinges in such a way that it gathers large bubbles of air and pushes them under the compression dome. This always happens at a time in the cycle of operation when no air should be in the dome; that is, after the draw has lowered the water level to where a minus pressure exists in the dome. This condition causes the flow to slow or even stop before the lower level is reached. Operation under this condition is far from what it should be. Correction is usually simple. A small stilling wall built between the pressure dome and the point where the incoming sewage flow impinges will stop this air from going into the dome.

If the pressure dome is cylindrical with a flat top, as many are, it should be set level or slightly sloped up to the point where the

blow-off pipe is connected at the highest point inside of the dome. If the dome does not discharge all of its air in the blow-off, the remaining air will interfere with the flow of water through the dome, especially after the minus pressure has been established during the latter part of the draw down.

In addition to these things that happen to siphons that we know something about, once in a while they seem to get just plain contrary and stop. Oftentimes they can be started by blowing air under the bell with a small pipe or rubber hose. A siphon can sometimes be kept in operation in this way long enough to learn what is making it stop. There must be a reason for any siphon stopping or failing to operate as it once did. This item of equipment has a very important part in the overall efficiency of the sewage treatment plant. It should not be neglected in any way.

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#### Arm-Chair Therapy for Cardiac Patients—

Some misunderstanding has arisen concerning one contraindication to arm-chair therapy. The opinion has been expressed that very sick patients, including those with pulmonary edema, congestive failure, or significant elevations of temperature, are not permitted to follow this program until such time as their general condition improves. This is an erroneous concept. Excepting those patients in shock, those with such disability that physically they cannot sit up, and those with a fresh deep skin thrombus, the sickest patients often derive the greatest benefit from the chair. Such an example is the patient with myocardial infarction admittedly in congestive failure, pulmonary edema, and cyanosis who appears to be extremely ill. In such patients, one of the maximum benefits of the program is achieved in that one often observes the clearing of pulmonary edema and clearing or partial clearing of congestive failure with the patient assuming the sitting position. A second very apparent benefit resulting from this program is improvement of mental outlook. Only those who have treated patients with myocardial infarction both by the conventional method of bed rest and by the arm-chair treatment can appreciate the magnitude of this improvement. Almost immediately the patient adopts a more optimistic attitude. Instead of lying in bed dreading the consequences of his illness and fearing that the slightest possible movement will precipitate disastrous results, the patient allowed to convalesce in a chair experiences hope rather than despair, optimism rather than profound depression. From this turn of events he perceives that the physician himself is hopeful of his recovery. It may be reiterated that, all things being equal, were no other benefits derived from the arm-chair therapy of myocardial infarction than this, this factor alone would establish the validity of the regimen.—Wyatt et al., *Virginia M. Monthly*, Aug. '53.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR APRIL 1953, AND  
COMPARATIVE RATES

Live Births Stillbirths and Deaths by Cause	Number Registered During April 1953			Rates* (Annual Basis)		
	Total	White	Colored	1953	1952	1951
Total live births	5672	3631	2041	21.8	23.0	25.5
Total stillbirths	140	64	76	24.1	25.5	30.6
Deaths (stillbirths excluded)	2133	1269	864	8.2	8.7	8.8
Infant deaths:						
under one year	196	87	109	34.6	40.7	32.0
under one month	135	65	70	23.8	26.3	22.5
Cause of Death						
Tuberculosis, 001-019	42	20	22	16.1	24.1	24.3
Syphilis, 020-029	11	2	9	4.2	5.4	6.3
Dysentery, 045-048	3	1	2	1.2	0.8	0.8
Diphtheria, 055					0.4	
Whooping cough, 056					0.4	3.1
Meningococcal infections, 057	4	3	1	1.5	0.4	1.2
Poliomyelitis, 080, 081	1	1		0.4	0.8	0.4
Encephalitis, 082, 083					0.4	
Measles, 085	2	1	1	0.8	3.5	1.6
Malignant neoplasms, 140-205	222	142	80	85.2	77.8	77.2
Diabetes mellitus, 260	31	18	13	11.9	7.4	9.4
Pellagra, 281	2	2		0.8	2.3	1.6
Vascular lesions of central nervous system, 330-334	268	158	110	102.8	101.5	120.0
Other diseases of nervous system and organs of special sense, 340-398	23	13	10	8.8	12.4	9.8
Rheumatic fever, 400-402	4	2	2	1.5	1.6	1.2
Diseases of the heart, 410-434	512	352	160	196.5		
Hypertension with heart disease, 440-443	145	83	62	55.6	275.4	267.0
Diseases of the arteries, 450-456	36	25	11	13.8	12.4	9.4
Other diseases of circulatory system, 444-447, 460-468	32	13	19	12.3	16.3	10.2
Influenza, 480-483	25	12	13	9.6	11.7	26.3
Pneumonia, 490-493	76	44	32	29.2	33.8	47.0
Bronchitis, 500-502	3	2	1	1.2	1.9	1.6
Appendicitis, 550-553	3	1	2	1.2	0.8	0.8
Intestinal obstruction and hernia, 560, 561, 570	10	6	4	3.8	4.7	3.1
Gastro-enteritis and colitis (under 2) 571.0, 764	5	3	2	1.9	2.3	3.5
Cirrhosis of liver, 581	7	7		2.7	4.3	5.9
Diseases of pregnancy and childbirth, 640-689	10	1	9	17.2	8.2	17.9
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 681, 682, 684	1	1		1.7		3.0
Congenital malformations, 750-759	34	25	9	6.0	4.7	3.8
Accidental deaths, total, 800-962	154	108	46	59.1	57.2	56.1
Motor vehicle accidents, 810-835, 960	63	51	12	24.2	18.7	28.6
All other defined causes	369	189	180	141.6	149.3	143.1
Ill-defined and unknown causes, 780-793, 795	99	35	64	38.0	51.7	37.2

\*Rates are expressed as follows: birth and death rates per 1,000 population; infant death rates per 1,000 live births; stillbirths per 1,000 deliveries; maternal deaths per 10,000 deliveries; deaths from specified causes per 100,000 population.

**Proctologic Examination**—The technique of a good proctoscopic examination is most important. First of all it should be a relatively painless operation. The patient, of course, appreciates not being hurt and it is also much easier to visualize the pathology if the patient is well relaxed. In our practice, we use a topical anesthetic, 4 per cent cocaine in lubricating jelly, to anesthetize the anal canal, and find it completely adequate if two or three minutes are allowed to elapse after application of the jelly. With this anesthesia it is possible to examine even the patient with an acute fissure or an external thrombosis.

Inspection of the anus reveals such things as external openings of fistulas, sentinel piles at the apex of a chronic fissure, external thromboses and the perianal irritation of pruritus. The appearance of the skin is often a good guide as to the type of topical application which will be the most effective in the relief of the pruritus. Mild applications should be used in acute cases. More stimulating applications in chronic cases. Most physicians make the mistake of using too strong solutions or ointments. It has been our experience that most cases of pruritus are overtreated with topical treatments. Good diet, to eliminate irritants, an astringent rectal irrigation and a mild topical application usually will clear up the pruritis if the physician and patient are persistent in the treatment.

A digital examination should be more than just putting a finger into the patient's rectum, for it often reveals information which cannot be gained even with speculum examination. The anal canal should be carefully palpated for spasm, stenosis and areas of scar. The size and thickness of sphincter muscle should be noted and of course careful search should be made for areas of induration where fistulas are suspected. This is best done by palpating the tissues between the thumb and forefinger. Any palpable tumor masses within the rectum should be palpated for fixation to the muscularis and other structures in the pelvis. After these procedures the anal canal and lower rectum can be visualized with a speculum and the choice of speculum is up to the physician. Needless to say, any patient with anorectal pathology should be examined with the sigmoidoscope to be sure that no associated pathology exists higher up. The Ives speculum is quite satisfactory for most cases where no stenosis or abnormal anal spasm exists. In cases with acute fissures, anal spasm or anal stenosis a smaller speculum, such as the small Brinkerhof, is more satisfactory. Ordinarily the bivalve speculum, like a Pratt, will cause too much pain for satisfactory examination. We feel that a proximally lighted sigmoidoscope is preferable to the distally lighted instrument because small bits of stool and mucus obscure the distal light and make the examination more difficult. The distally lighted scopes also have a much more delicate lamp which is more easily broken or burned out.

Ideally, a patient should be examined before and after enemas.—*Newmeister, Journal Lancet, August 1953.*

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## AMERICAN MEDICAL ASSOCIATION NEWS

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### EMOTIONS AND TENSIONS ARE FREQUENT CAUSES OF HEADACHES

When something bothers a turtle, he pulls his head into his shell. When something bothers a human being, he pulls his head into the shell of a headache.

A headache is not a disease by itself, but rather a symptom of a disease or functional disturbance. Headaches of emotional or psychogenic origin are extremely common, according to Dr. Noah D. Fabricant, Chicago.

"The emotional, fidgety person besieged by worry, anxieties and fatigue often suffers from headaches," Dr. Fabricant wrote in the August Today's Health magazine, published by the American Medical Association. "In many instances he is not aware of the underlying difficulty responsible for precipitating the head pain.

"The human being similarly can be thrown off balance by emotions such as hate, hostility, anger, rage, resentment, jealousy and suspicion. Professional men, business executives and white-collar workers are vulnerable to psychogenic headaches, which are likely to put in an appearance at the end of a trying day.

"Psychologic and emotional problems vary greatly from person to person. In some people they are produced by unfavorable situations; in others, the difficulty rests primarily in the inner life of the headache sufferer, with the result that he cannot adjust adequately to the usual demands of daily life."

Emotional headaches can be fickle and bizarre. They have no pattern as to time, duration of attack or location of pain, Dr. Fabricant pointed out. There is often a tendency of the patient to exaggerate the extent of the headache, to portray it in melodramatic terms and to boast of the suffering he is compelled to endure. However, such headaches rarely interfere with work, play or sleep, and are usually relieved by a brief nap or an aspirin. These headaches may go on for years without seriously impairing vigor or well-being.

"In many people with chronic headaches, medication is chiefly of value in relieving the discomfort of the acute attack," Dr. Fabricant stated. "But, only by reducing

the amount of mental stress can headaches be reduced in frequency and severity and thereby rendered easier to control by therapeutic means.

"Occasionally a few people with headaches of emotional origin can take stock of their own affairs and, by noting the circumstances under which distress is produced, do something concrete to rectify the situation. In most people, however, modesty, pride, fear and shame serve to hamper the investigation into the patient's fundamental problem.

"By uncovering the patient's hopes, ambitions, fears, frustrations and anxieties, the physician is frequently able to correlate the onset of symptoms with periods of particular emotional stress in the patient's life.

"Finally, when the patient is encouraged to develop insight into the nature of the various factors precipitating his headaches, he is in a better position to help solve some of his problems, and his headaches as well."

However, Dr. Fabricant stressed, headaches of recent origin frequently require immediate investigation as they may indicate the beginning of a serious ailment. A thorough clinical and laboratory study will determine whether or not a disease is present.

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### ANTIMALARIAL DRUG AIDS IN TREATMENT OF SKIN DISEASE

Preliminary studies have shown chloroquine diphosphate, an antimalarial drug, to be of value in the treatment of a serious skin affliction, discoid lupus erythematosus, according to an article in the August 8 Journal of the American Medical Association.

Discoid lupus erythematosus is a superficial inflammation of the skin marked by disk-like patches with raised reddish edges and depressed centers, and covered with scales or crusts. These fall off leaving dull-white scars.

Results of a four-month study of 14 patients suffering from the affliction who were treated with the drug were described by Drs. Leon Goldman, Donald P. Cole and Robert H. Preston, Cincinnati. Great improvement was noted in nine patients and some improvement in three.

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## TOXEMIA OF PREGNANCY

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Preeclampsia is a clinical syndrome characterized by the development of hypertension, albuminuria, and edema in a pregnant woman who has previously been normal in these respects. Eclampsia is the extension of this pathologic process to such a point that the patient develops, in addition to the findings just mentioned, convulsions or coma.

The importance of these toxemias in clinical obstetrics cannot be overestimated. Approximately six per cent of all pregnant women develop such a toxemia, and one-fourth of all maternal mortality is directly attributable to toxemia. In addition, the fetal loss resulting directly or indirectly from preeclampsia and eclampsia is appalling.

The etiology of the disease remains obscure; eclampsia thus continues to be the disease of theories. It will be best not to dwell on the debatable arguments as regards the etiology, but to point out certain facts about the disease which are well known.

In the first place, this is a disease which is peculiar to pregnancy; it has no exact counterpart in the non-pregnant state. Indeed, it has been thus far impossible to reproduce the disease experimentally by the administration of any combination of drugs, bacteria, hormones, or other noxious material.

Again, this is a disease of late pregnancy or the early puerperium; it is almost unknown before the 24th week of the pregnancy or after the first week of the puerperium.

Even though the etiology of the disease is obscure, the symptomatology is clear cut, and the diagnosis usually offers no difficulty. The major triad of symptoms consists of hypertension, albuminuria, and edema.

The earliest and most dependable sign of impending preeclampsia is, in most cases, hypertension which develops suddenly. A sudden increase in blood pressure must always be viewed with suspicion, even though the level reached would not ordinarily be alarming. Thus, even though hypertensive levels are not reached, an increase in blood pressure of 30 mm. systolic, or 15 mm. diastolic, must be considered a warning sign.

The next most important sign of developing preeclampsia is sudden weight gain, which is not explainable on a basis of dietary indiscretion. This sudden weight gain is due to abnormal water retention by the tissues, and is often demonstrable long before clinical edema becomes manifest. It has been estimated that the body will retain five pounds of water before edema becomes apparent. It should be noted that it is the suddenness of the excessive weight gain that is especially pathognomonic of preeclampsia rather than any overall increase distributed throughout the gestation. Clinical edema, of course, is an extension of this same process. Edema of the face and hands is of more significance than pedal edema.

Albuminuria is a very common finding in preeclampsia, and the amount of albumin excreted is roughly in proportion to the severity of the toxemia. On the other hand, an occasional case of severe toxemia will show no albuminuria or only a faint trace,

while it is not rare to find a patient who, because of some renal disorder, excretes albumin regularly and yet has no toxemia at all.

It must be emphasized that the three cardinal signs of early toxemia, hypertension, weight gain, and albuminuria, are all of such nature that they cannot be recognized by the patient. By the time the patient develops the headaches, the epigastric pain, and the convulsions of late toxemia, much valuable time in the treatment of the disease will be lost. Hence it is only through a careful plan of prenatal study that the physician will pick up the early evidence of the developing complication at a time when treatment will be most effective.

Even though the diagnosis of preeclampsia and eclampsia is usually not difficult, the institution of proper treatment may tax the judgment of the most experienced clinician.

The goal of treatment of these toxemias is the prevention of severe preeclampsia and convulsive toxemia. I am not sure whether mild preeclampsia can be prevented. However, there is no question but that the more advanced stages of the disease can be prevented or greatly reduced in incidence.

Prevention of serious toxemia is accomplished by vigorous treatment during the early stages. With the first appearance of the signs of toxemia, the patient should be given mild sedation and should have periods of rest during the day. In addition, any tendency to edema should be combatted by eliminating from the diet all salt, soda, and all foods containing large amounts of these materials. It should be remembered that it is the sodium ion rather than the chloride which causes retention of water in the tissues. Further, elimination of water and salt from the body may be accomplished by purgation with a laxative such as Epsom salt.

If the patient fails to improve and her toxemia becomes more severe, then treatment must be intensified. The patient should be put on complete bed rest and sedated heavily. Hypertonic glucose should be given intravenously to improve the urinary output, as well as provide carbohydrate to protect the liver against damage. Magnesium sulfate intravenously or intramuscularly is recommended for its specific effect as a vasodilator and smooth muscle sedative. All intravenous fluids should be

distilled water and not saline. Periodic checks of blood pressure should be made, and the urine should be examined at least daily for albumin.

Much argument exists as to the relative merit of the various sedative drugs. Morphine, chloral hydrate, paraldehyde, and the barbiturates all have ardent champions. It is highly probable that no one of these has much advantage over the other. My own preference is for Sodium Luminal hypodermically, alternating occasionally with paraldehyde to avoid cumulation.

After several days of such intensive treatment, the patient should be carefully re-evaluated as to response to this therapy. If the response has been excellent, the pregnancy may be continued, often for several weeks, without ill effect. However, in the majority of patients with severe toxemia, the patient will have improved but not to a degree which warrants continuation of the pregnancy. In these cases the pregnancy must be terminated, employing induction of labor and vaginal delivery in almost all cases. In the occasional case with a baby which is just at the lower limit of viability, one may temporize for a week or two for the purpose of getting a more mature baby. However, if the pregnancy is of 34 weeks gestation or more, better maternal and fetal results will be obtained by the induction of labor while mother and baby are in good condition. By temporizing in such cases, the fetus is subjected to the risks of intra-uterine death and abruptio placentae, while the mother is receiving increasing damage from her toxemia. Rigorous medical management must be maintained throughout the labor and the first few days of the puerperium.

Full-blown convulsive toxemia is treated along similar lines. It must be remembered that eclampsia requires emergency treatment, but that this treatment is directed toward improving the medical status of the patient, and not toward effecting immediate delivery. Sedation must be heavy and adequate for the control of restlessness and convulsions. Often very large doses must be given. My own practice is to give 4 grains of Sodium Luminal intramuscularly every hour until adequate sedation is accomplished. No running order for sedation must be given, as the requirements of the patient may change; it is not unusual for

the toxemia to improve and for the patient to sleep for many hours from sedatives which barely controlled convulsions.

Magnesium sulfate and intravenous glucose are widely used. A word of caution is in order concerning intravenous fluids: pulmonary edema may follow their injudicious use. Seldom should more than 3000 cc. of glucose be given in a 24-hour period.

Oxygen therapy is of great value in the management of these convulsive patients; its use either by tent or nasal catheter should be encouraged.

Above all, major operative procedures should be avoided in these desperately ill patients. It is amazing how well these patients can withstand prolonged periods of

hypertension and coma, provided that they are not subjected to the shock of cesarean section or other major procedure. The return to conservative obstetrics in the last few years has resulted in a drastic reduction in maternal mortality from eclampsia.

Many of these patients go into labor spontaneously and deliver without difficulty. In the remainder, after a period of several days of medical therapy, and after maximal improvement in the condition of the patient has occurred, induction of labor will usually give a satisfactory outcome. Cesarean section should be reserved for those cases where disproportion or some other complication besides the toxemia makes its use mandatory.

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## RECTAL CARCINOIDS

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and

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A review of the literature relating to the carcinoid group of tumors discloses the gradual emergence of carcinoids as distinct clinical entities. Heidenhain, writing in 1870, described a "chromaffin" reaction in certain cells of the gastric mucosa. Nussbaum, in 1879, demonstrated the affinity of these cells for osmic acid. Nicolas, in 1890, and Kultschitzky, in 1897, described certain cells containing acidophilic granules, in the intestinal crypts. Lubarsch, in 1888,<sup>12</sup> using a silver impregnation technique, demonstrated a definite relationship between cell nests found in two tumors of the ileum and others found in the crypts of Lieberkuhn. He thus distinguished such cell formation from columnar cell adenocarcinoma of the gastrointestinal tract. In 1890 Ransom<sup>21</sup> reported a similar tumor of the ileum which had metastasized to the liver. In 1907 Oberndorfer<sup>16</sup> suggested the use of the term "carcinoid" for tumors of this type, which he considered to be benign. Huebschmann<sup>1</sup> called attention to the yellow color of the cut surfaces of this tumor. He believed that they arose from the "Gelbenzellen of

Schmidt." Trappe and Saltykow<sup>29, 25</sup> later postulated that these bizarre tumors represented pancreatic cell rests. In 1914 Gosset and Masson<sup>7</sup> demonstrated the affinity of the Kultschitzky cells found normally in the intestinal crypts for silver salts. They showed further that carcinoid tumors of the appendix represented down growths of these argentaffin cells from the crypts of Lieberkuhn into the submucosa. Extensive work by Cooke, Forbus, Raiford, Humphrey, et al.<sup>3, 6, 20, 10</sup> has tended further to relate the argentaffin tumors to the Kultschitzky cells. Erspamer, in 1936,<sup>27</sup> isolated a complex diphenol from the normal argentaffin cells, the presence of which was necessary for the reduction of silver by the granules in the cytoplasm of the Kultschitzky cells. This substance he called enterochrome. He pointed out that immature cells and some tumors derived from the argentaffin cell lacked the ability to reduce silver, although the cells were otherwise morphologically the same. In 1942 Stout studied a series of six cases of carcinoid tumors of the rectum which he maintained were derived from these so-called pre-enterochrome cells of Erspamer.

N. W. Popoff<sup>18</sup> has made a series of functional histologic studies of the argentaffin cell as found in the gastrointestinal tract.

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From Veterans Administration Center, Bay Pines, Florida.

The senior author is former Chief of Surgery at the Center.

His work represents another effort to enlighten the unsolved problem concerning the origin and function of these cells. In discussing the changes in morphology of the mucous cell which he has observed, he writes:

"Under normal circumstances, the mucous cell of the intestine passes through successive phases of secretory activity and when finally the cell reaches the stage of functional exhaustion, it does not perish. It becomes refractory, loses its response to normal or artificially applied secretory stimuli and undergoes a cytomorphosis, manifested by the appearance, accumulation and gradual disappearance of substances which have the property of reducing metallic salts. In the course of its cytomorphosis, the cell changes its position, dedifferentiates and returns eventually to the state of a normal cell. This cytomorphosis of the functionally exhausted mucous cell is designated as a phenomenon of functional rejuvenation and the entodermal argentochrome cell may be called a rejuvenocyte."

Popoff further concludes: "Argentaffin cells are found in benign pedunculated polyps and in some portions of malignant tumors of the intestine. In their origin and significance they are similar to argentaffin cells in the normal intestine. The characteristic feature of benign polyps is that the rejuvenated cycle proceeds normally and mitoses are rare. When, owing to any cause, rejuvenation fails, the cells begin to regenerate and the process of exuberant regeneration may take the course of malignant neoplasm."

In view of this research and its application to the argentaffin cell, the histopathologic findings in carcinoids may vary according to the stage at which this cycle may be interrupted. The microscopic picture of carcinoids as presented in case reports (literature) varies, and represents a composite description of the architectural arrangement of nests of round or polygonal cells.

In Masson's<sup>13, 14</sup> description of the carcinoid tumor of the appendix or ileum the appearance is somewhat variable. In general, there are cords of round or polygonal cells with palisading, or the outlining of a cell column by a thin connective tissue septum. Occasionally the cells are columnar or prismatic and they may group themselves around a center, giving the appearance of tubules, rosettes or pseudo-rosettes. The

centers may contain an albuminous deposit. The nuclei are large and eccentrically placed. The cytoplasm is granular and takes a neutral stain. Adjacent to the nucleus are large fuchsinophilic granules which darken with ammoniacal silver nitrate. Mitoses are rare. In five or six rectal carcinoids Stout<sup>27</sup> found a significant variation from the description of Masson. In one case the tumor consisted of solid masses of polygonal cells. In four others the appearance was that of festoons or ribbons of cells which gave a striking appearance. Horn,<sup>8</sup> in his microscopic description of carcinoids of the colon, found the histopathologic picture to correspond to the composite description as given by Masson. Two of his six cases of rectal carcinoids correspond to Stout's description. The absence of the argentaffin granules in the tumor cells has not been used as a point against the argentaffin origin of the carcinoids, since the work of both Erspamer and Popoff had indicated that the tumor cells may be at any one of the several stages of immaturity.

#### REPORT OF CASES

No. 1. E. W. B., age 58, white male. He was admitted to the hospital with the complaint of passing bright red blood by rectum, accompanied by diarrhea, and a weight loss of four pounds. Except for the occasional attacks of diarrhea which were followed by periods of constipation he had very few gastrointestinal complaints. The diagnosis of a rectal tumor was established by x-ray and proctoscopic examination. Cystoscopy revealed no bladder involvement. A rectal biopsy revealed carcinoma, anaplastic, with necrosis. The mucicarmine test was negative. A two-stage Lahey abdominoperineal resection of the rectum and sigmoid was performed. The operative findings revealed no distant metastases. Two biopsies of mesenteric lymph nodes were negative for metastases. The rectal mass measured approximately 8 cm. in diameter; it was attached firmly within the pelvis and to a loop of ileum. The tumor had the appearance of an expansile growth; it was not invading the adjacent tissue except for the attached ileum. Dissection of the mass gave the impression of a pseudo-capsule surrounding the greater part of the tumor mass. A line of cleavage could be established between the mass and the adjacent structures.

Gross Pathology: "The specimen of sigmoid, rectum and anus measures 31 cm.,

with 25 cm. of ileum attached. A large fungating mass which extends for 9 cm. and widely ulcerated has infiltrated the entire thickness of the colonic wall. There is infiltration of the adherent loop of ileum. The mass measures 7 cm. x 6 cm. There is infiltration of tumor tissue into the mesocolon. There is complete obstruction of the lumen of the colon. Satellite nodules in the submucosa are present a short distance from the original lesion. Lymph nodes removed with the specimen were negative for metastases."

The first consideration that this tumor might be a carcinoid was suggested when the microscopic sections were examined. The architectural arrangement of the tumor cells was strikingly suggestive and on further examination of the various fields the festooned arrangement, the cord-like structures, rosettes and pseudo-tubular formation as previously described were apparent. The cells were uniform in size with large eccentric nuclei. The histopathologic picture conformed to that described for this lesion. Specific staining revealed the tumor to be mucicarmin negative. No argentaffin cells were demonstrated in the section.

Four months after the abdomino-perineal resection the patient was readmitted to the hospital as an emergency and expired within 36 hours as the result of a strangulated volvulus of the ileum and peritonitis. Post-

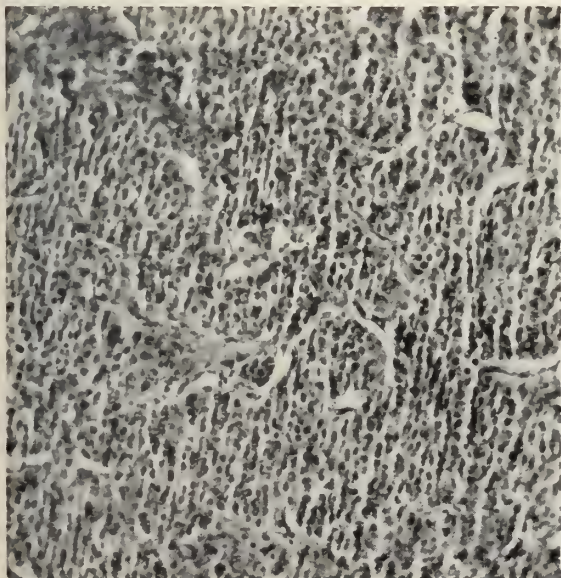


Fig. 1. Rectal tumor (surgical specimen) H & E; x 150.

Note the arrangement of the small round or polyhedral tumor cells in nests or solid cords with suggestion of palisading at the periphery of columns.

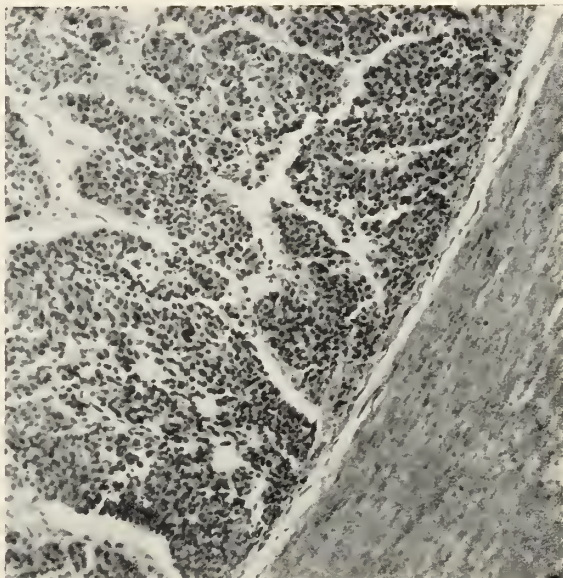


Fig. 2. Liver metastases: H & E; x 150. Arrangements of tumor cells similar to Fig. 1.

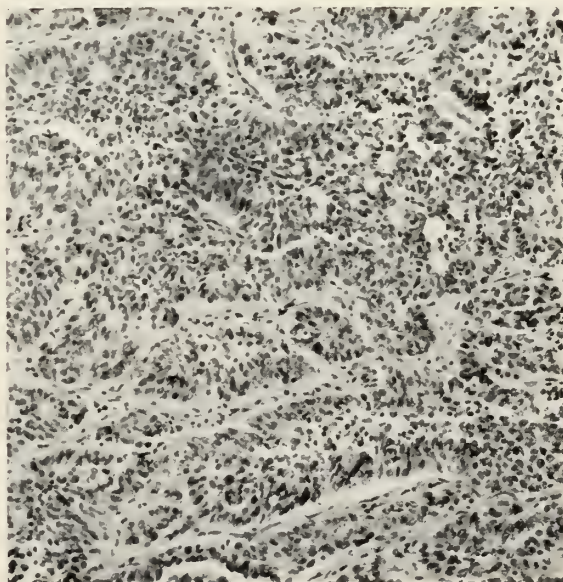


Fig. 3. Metastasis to lymph node. H & E; x 150.

Note tendency to rosette and gland-like formation.

mortem examination demonstrated that within this short period of four months widespread lymphatic and liver metastases had developed. It was assumed that, during surgery, tumor emboli had been released into the blood stream and lymphatics. Post-mortem microscopic section of the liver metastases is shown in figure 2, and there again, there is a duplication of the histopathology observed in the primary lesion (figures 1 and 2). Metastases were noted in regional lymph nodes (figure 3).

No. 2. W. P., age 38, white male, was admitted to the hospital in July 1949. His complaints were those of rectal discomfort for a period of three years, weight loss, diarrhea and obstipation for seven months. There was no rectal bleeding. He was explored in August 1949, at which time the liver was not grossly involved, and biopsies of the lymph nodes were negative for malignancy. A large rectal tumor was found attached to the bladder and was considered at that time to be inoperable. A palliative transverse colostomy was performed and the abdomen closed. His postoperative condition was satisfactory.

He was readmitted to the hospital in January 1950. Interval history was that he had been well for a few months but then he again began to lose weight, developed rectal tenesmus, and feeling of weight and pressure in the perineum with a discharge from the rectum. He was operated on again and a Miles abdomino-perineal resection performed. No evidence of liver or lymph node metastases was found. The tumor was adherent to the bladder, prostate and pelvis. The mass was similar to the one in Case 1, for its growth was expansible in type and was not invading the adjacent structures. There was a pseudo-capsule about the mass, and although it stripped off of the adjacent structures with difficulty there was no direct invasion demonstrable at the time of surgery.

Gross Pathological Description: "The specimen is that of the rectum and the sigmoid and measures 38 cm. in length; it consists of a large tumor mass which measures 17 cm. in length and 10 cm. in diameter, weight 875 gm. Proximal to this tumor is 11 cm. of uninvolved sigmoid. Distal to the tumor is 9 cm. of uninvolved rectum. The tumor mass is solid and gray in appearance, friable and necrotic, and cuts with a gritty feel. It has invaded the entire wall of the rectum and the sigmoid throughout the extent of the tumor. A small area of prostate gland measuring 2 x 2 cm. is attached to the specimen."

Microscopic Description: "The wall of the rectum is the site of an anaplastic epithelial growth prevalently composed of multiple cords and nests of uniformly regular small round cells with little basophilic cytoplasm. Mitoses are very rare. The tumor is necrotic in places. The stroma is composed of hyaline connective tissue, poorly

vascularized. Here and there the desmoplastic reaction of the tumor causes the epithelial cells to be arranged in coiled festoons or ribbons. Here and there, there is suggestion of rosette formation. The rectal mucosa is partly destroyed by the compressing neoplasm. In other portions the mucosal layer is still intact and edematous. Sections of the prostate gland show nodular hyperplasia, moderate. Lymph nodes removed

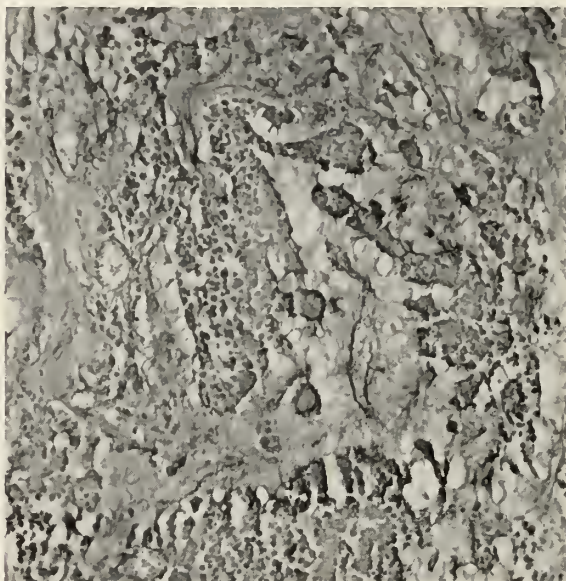


Fig. 4. Rectal tumor (surgical specimen) H & E; x 150.

Tumor cells are uniformly small and round. There is obvious tendency to festoon or ribbon-like arrangement.

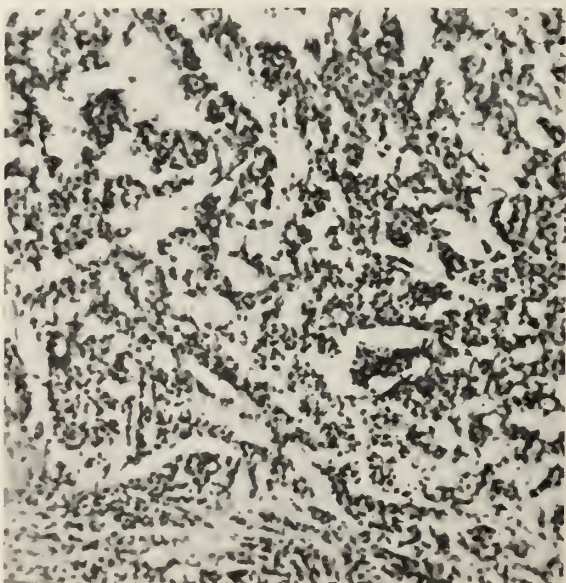


Fig. 5. Rectal tumor (surgical specimen) H & M. C.; x 150.

The tumor cells form columns and clusters with the abundant intercellular mucus present.

with the specimen were negative for metastasis."

*Microscopic Diagnosis:* "Carcinoid tumor of rectum, extensive" (figures 4 and 5).

The immediate postoperative course was satisfactory. Subsequently, however, he developed recurrence of the tumor in the perineal wound. Left ureteral obstruction and pyonephrosis necessitated a nephrectomy. The pain in the lower abdomen became severe and cordotomy was resorted to. His course was gradually down hill and he expired nine months after the abdomino-perineal resection. Postmortem examination revealed a local recurrence of the carcinoid in the pelvis and along the lumbar chain of nodes. There was, in addition, recurrence of the tumor in the pelvis, perineum, and bladder, and spread to the anterior abdominal wall.

#### DISCUSSION

Case 1 presents the histopathologic findings which have been described as being characteristic of the cellular and architectural structure of carcinoid tumors. There are cords of round cells with palisading and cell column formation. The cellular arrangement at some points suggests the appearance of tubules. There is further rosette or pseudo-rosette formation, and in certain fields the appearance of festoons or ribbons of cells. Grossly, this spherical tumor measured approximately 8 cm. in diameter. In the dissection there was a semblance of a pseudo-capsule. The circumscribed tumor developed by an expansile type of growth. Growth by infiltration was not apparent, excepting at one point in which the tumor had invaded the ileum. Differential stains indicated the tumor to be negative for ammoniacal silver nitrate and mucicarmin. This case fulfills the criteria for the diagnosis of carcinoid tumor, with the one exception that argentaffin granules were not present.

Case 2 differs in some respects from Case 1, and is being considered only in that the microscopic sections in some particulars suggest certain characteristics of a carcinoid tumor. The differential staining of the tissue in this case showed no argentaffin granules, and mucus-secreting cells were present as demonstrated by the mucicarmin stain. Case 2 showed similarity to the preceding one in that the tumor behaved in a manner similar to the preceding one. Its weight

was 875 grams and it measured 17 cm. x 10 cm. The tumor mass was circumscribed, well-demarcated, and showed no evidence of growth by invasion, but rather by expansion. It was adherent to the structures in the pelvis. However, a line of cleavage was easily established between the tumor and the adjacent tissue. In neither case was there evidence of metastasis to the liver or the mesenteric lymph nodes preoperatively. Attention is also called to the fact that postoperatively, in Case 1, which is a proven carcinoid of the rectum, widespread liver and lymphatic metastases occurred within three months. In Case 2 an interval of nine months elapsed between operation and postmortem and the metastases at that time were confined to the pelvis, abdominal wall and perineum. No metastases were demonstrated in the liver.

#### TREATMENT

The treatment of carcinoid tumors of the rectum varies according to their size at the time of operation, as has been pointed out by Dukes.<sup>5</sup> For the small, localized tumors, wide excision with subsequent periodic follow-ups is sufficient. For the larger tumors with invasive characteristics a more radical procedure must be employed. When recurrence is apparent, the more radical and definitive procedures must again be resorted to.

#### SUMMARY

Two cases of malignant carcinoid tumor of the rectum are presented and discussed from the clinical and pathologic viewpoint.

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**Use of Insulin in Diabetes**—In order to acquaint the diabetic patient with his problem, I frequently compare the normal automatic homeostatic control of the blood sugar level in the body with a thermostatically operated furnace designed to keep a constant temperature in the house.

Sugar derived from the digestion of food is absorbed into the blood stream and, therefore, after a meal, the blood sugar concentration increases. In the normal, this is the automatic signal for secretion of insulin from the pancreas into the blood stream, and the insulin then permits sugar to leave the blood and enter liver and muscle cells where it can be used, thus returning blood sugar concentration to its previous fasting level.

Similarly, as the temperature of a house becomes colder, the thermostat will automatically turn on the furnace, which will return the room temperature to the desired level. The furnace may fail to return the temperature to the proper level either because its fuel supply is exhausted or because of a defect in the thermostat mechanism. The patient may have an abnormally high blood sugar either because the insulin supply becomes exhausted or the control of the insulin supply is defective. In the latter instance there are rapid frequently unaccountable fluctuations of blood sugar, and the diabetic condition is much more difficult to control.

Insulin is required 24 hours a day whether food is ingested or not. Most diabetic patients continue to have some insulin of their own available and require only to have this supply supplemented. In order to provide the release of insulin throughout 24 hours, the regular or crystalline insulins which last only four to eight hours after subcutaneous injection have been combined with various molecules to delay the release of insulin from the site of injection. Effects of a single injection of protamine zinc insulin persist for from 24 to 40 hours and are slow in onset.—*Hampton, J. Florida M. A., September '53.*

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The principal needs (in tuberculosis control) can be simply stated: more hospital facilities, not only to cure but to isolate open cases from spreading further infection; more preventive work; better education in tuberculosis for the oncoming generation of medical students and nurses; and more education of the lay public regarding the prevention and care of tuberculosis, that is, health education. These objectives need no confusing elaboration.—*Alan Gregg, M. D., Am. Rev. Tuberc., April 1953.*

## THE DIAGNOSIS AND MANAGEMENT OF THE IRRITABLE COLON

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The term "irritable colon," which was popularized two decades ago by Kantor<sup>1</sup> and by Jordan,<sup>2</sup> is now perhaps better referred to as the "unstable colon."<sup>3, 4</sup> It is always a timely subject because colonic dysfunction is by far the most common gastrointestinal disorder confronting the physician, the incidence being variously estimated at 30 to 40 per cent of ambulant gastrointestinal patients.<sup>2, 4, 5</sup> Failure to consider the diagnosis leads to considerable unnecessary surgery, to postoperative disability, and to delay in diagnosis of a benign process fairly responsive to adequate treatment.

The patient with the neuromuscular disorder of the bowel called irritable colon presents several of the various abdominal symptoms of heartburn, eructations, borborygmi, distressing passage of flatus, anorexia, nausea, vomiting, distention and altered bowel function. In addition, he frequently has extra-abdominal complaints of headache, fatigue, giddiness, foul taste in the mouth, scotomata, globus, palpitations, chest or shoulder or flank discomfort, and low backache. Most of the foregoing is easily identified as being intestinal, neurotic, or migrainous in character. Not mentioned so far, however, is the major complaint bringing the patient for attention. This is true visceral pain, sometimes easily classified as a spastic sigmoid but more often occurring in confusing locations. The most common pain—epigastric discomfort—occurs in 40 per cent and is the chief complaint in 25 per cent of patients and deserves special mention. Jordan, Palmer<sup>6</sup> and other

authors have repeatedly emphasized the upper abdominal discomfort which suggests peptic ulcer or gallbladder disease, yet is neither. The discomfort varies from an actual gnawing distress to one of fulness or of gripping pain. There may even be temporary food or alkali relief but usually the relief is quite transient. The pain may be postprandial (often immediately so) and is differentiated only by the company it keeps: shifting pains elsewhere in the abdomen, gas, disturbed bowel function, etc. Seasonal variation is noted but true periodicity is uncommon. A negative stomach x-ray and cholecystogram are far from a complete study; a barium enema is more often diagnostic. Epigastric pain occurring in the irritable colon syndrome has several explanations. The postprandial pyloro-ileal or the gastrocolic reflex frequently initiates motility in a spastic transverse colon, the same mechanism often explaining also the confusing pain in the gallbladder area. Another mechanism is pyloro-duodenal irritability (hypermotility or else pylorospasm) which may accompany the irritable colon,<sup>7, 8</sup> with or without cholecystitis or peptic ulcer. A third explanation of epigastric pain is the so-called diaphragmatic flexure syndrome of Kantor. The elongated gas-filled splenic flexure produces pressure on the stomach and under the heart; consequently a meal often causes epigastric fulness, pain referred to the left precordium and, in the sensitive patient, may induce palpitation and cardiac neurosis.

Painstaking inquiry concerning bowel habits is necessary. History of recent and past constipation and cathartic habit, stool consistency and shape, time and number of defecations, unexplained episodes of diarrhea, presence of mucus, history of straining at stool, and relation of bowel movements to onset of pain are all necessary questions. Blood in the stool most commonly indicates benign anorectal disease; otherwise it indicates something more sinister than a simple irritable colon.

In a study of 200 patients with irritable

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2. Jordan, S. M., and Kiefer, E. D.: The Irritable Colon, *J. A. M. A.* 93: 592-595, 1929.

3. Jordan, S. M.: Colonic Dysfunction, *New York State J. Med.* 49: 1802-1807, 1949.

4. Kantor, J. L.: The Unstable Colon, *South. M. J.* 25: 29-37, 1932.

5. Spriggs, E. I.: Functional Disorders of the Colon, *Quart. J. Med.* 24: 533-565, 1931.

6. Palmer, W. L.: The Functional Bowel, *M. Clin. North America* (Chicago number) 22: 139-152 (Jan.) 1938.

7. Bockus, H. L.: *Gastro-Enterology*. Philadelphia, W. B. Saunders Co., vol. ii, p. 479.

8. Bockus, H. L.: *Ibid.*, vol. ii, p. 486.

colon Jordan and Kiefer<sup>2</sup> divided the patients into three groups. Group I was the largest and included patients with chiefly abdominal complaints. The chief symptoms, in order of frequency, were: gas, epigastric distress, generalized abdominal pain, loss of weight, nausea, anorexia, regurgitation, right lower quadrant pain, and, lastly, discomfort in each of the remaining three abdominal quadrants in approximately equal incidence. Low backache was also a significant complaint, being explained by radiation from the cecum or sigmoid colon. Seventy per cent complained of constipation (dry, infrequent stools); the majority resorted to laxatives. Loose stools without catharsis occurred in eleven patients; only nine patients had normal defecation. The two smaller groups of patients had, in addition, various combinations of palpitations, giddiness, faintness, dyspnea, and heart pain (group II), and headache, nervousness, easy fatigability and loss of vigor, and urticaria (group III).

Precipitating or predisposing factors for this complicated functional syndrome are many. It may occur in an otherwise stable person;<sup>2</sup> it may underlie a neurosis, or it may occur with a frank psychoneurosis, respond to treatment, and leave the neurosis unchanged. Cathartic abuse is the greatest fault, followed by poor hygiene, excess tobacco and alcohol and, very importantly, a faulty diet. Unremitting nervous tension or unresolvable personal conflicts often precipitate the disorder and when not correctible may prevent an otherwise possible cure. Exacerbations occur following infections, especially upper respiratory infections. Colonic instability may be initiated by amebic or bacillary dysentery and persist thereafter. It often complicates urinary tract disease, cholelithiasis, peptic ulcer and gynecologic disorders, confusing thereby the diagnosis and compromising therapy. Except for the brief history, carcinoma of the colon in the early stages may be confused with an irritable colon because it may mimic almost precisely functional colon distress. Patients with the irritable colon syndrome require attention over the years and as they advance through the cancer years may easily have a still operable carcinoma overlooked. Periodic x-ray and proctoscopic check-up is the only assurance against undetected malignancy in patients with recurrent constipation, diarrhea or abdominal distress.

#### DIAGNOSIS

Diagnosis is accomplished by both positive means as well as negative. Physical examination may reveal a tender, ropy sigmoid, a full tender cecum, or may show diffuse abdominal tenderness. Undernutrition may be evident.

Barium enema may be diagnostic in about 75 per cent of patients with this syndrome.<sup>9</sup> Kantor established a certain timetable for a barium progress meal and described certain helpful findings. However, a barium enema is less time-consuming and reveals organic colonic pathology more accurately. Jordan and Kiefer set up certain standards and criteria for performance and interpretation. The patient is not prepared with cathartic or laxative so that tone and motility are more accurately evaluated. The enema of plain barium sulfate is given from a standard head of pressure of two and one-half feet. The criteria concerned (1) the length of the colon and presence or absence of redundancy, (2) the rate of filling and emptying, (3) appearance, depth, and frequency of haustral markings, (4) diameter of the colon with filling of the cecum, and (5) absence of sensation or occurrence of distress to the patient during the passage of the enema.

A detailed account of these differential x-ray features will not be undertaken; an example will be shown (fig. 1). Some radiologists may take issue with the specificity of these criteria but they were arrived at by gastro-enterologists who had every opportunity to correlate the clinical course of patients with personally conducted fluoroscopy. At any event, the plea here is that the positive diagnostic evidence of a functionally deranged gastrointestinal tract resides in large part in the colon, and a patient who warrants an upper gastrointestinal x-ray study should also have a barium enema and, if necessary, a cholecystogram.

This representation is not to be construed as the final answer. The x-ray signs of colonic dysfunction bear importance only if a thorough-going gastrointestinal survey has been otherwise negative and only if extra-abdominal causes are ruled out by complete medical appraisal. Other primarily gastrointestinal studies are indicated, such as gastric and stool analysis, sigmoidoscopic examinations, and gastroscopy. Suspected

9. Jordan, S. M., *The Unstable Colon and Neurosis*, J. A. M. A. 99: 2234-2237, 1932.

organic disease in the colon requires colonic cleansing before x-ray and endoscopic study.

#### DIFFERENTIAL DIAGNOSIS

One should bear in mind that, with the exception of malignancy, uncomplicated organic gastrointestinal disease is peculiarly classical in signs and symptoms. Atypical abdominal or thoracic distress should alert the physician to look for coincident disorders. The irritable colon is the most common disorder complicating organic gastrointestinal disease.

Acute surgical conditions in the abdomen generally pose only the choice of time and type of operation. It is chiefly in the field of elective surgery that much difficulty exists.

The syndrome ascribed to "chronic appendicitis" nearly always represents a spastic cecum. Reported incidence of appendectomy in patients with an irritable colon is 22 per cent or more, which is greater than in the general population.

Acute cholecystitis is to be differentiated from other acute surgical conditions but the diagnosis of chronic cholecystitis is to be made confidently only in the presence of calculi or typical biliary colic with a non-visualized gallbladder. This colic at one time or another awakens the patient and causes associated nausea and vomiting without aerophagy. If in addition to gallstones there is chronic dyspepsia, one must inform the patient that he will need long-term bowel management even though relief from the colic may be had through cholecystectomy. In the non-icteric patient with chronic dyspepsia but no colic the non-visualized gallbladder or the faintly visualized gallbladder without stones does not necessarily indicate cholecystitis. Only after a trial of bed rest, bowel management, and antispasmodics with subsequent double-dose or even intravenous cholecystography (which must be technically perfect) may one then recommend operation.<sup>10</sup> Likewise, recurrent right upper quadrant pain after cholecystectomy, particularly where no calculi were found, does not ordinarily indicate biliary dyskinesia or the so-called postcholecystectomy syndrome. Generalized intestinal spasm with involvement of the

sphincter of Oddi is more often at fault and will usually respond to bowel management. Elevated serum bilirubin or serum amylase or the finding of cholesterol or calcium bilirubinate crystals in the duodenal drainage, however, indicates organic trouble in the biliary or pancreatic duct system (such as common duct stone, diseased cystic duct remnant, cholangitis, undiscovered carcinoma, fibrous contracture of the sphincter of Oddi, common duct stricture, or chronic pancreatitis). From a practical standpoint biliary dyskinesia does not occur in the unoperated on patient,<sup>11</sup> and postcholecystectomy pain can eventually be diagnosed in anatomic terms or be ascribed to a general functional derangement amenable to conservative treatment.<sup>12</sup> Cole<sup>13</sup> thinks that biliary dyskinesia may exist but has not personally made such a diagnosis.

As mentioned, the uncomplicated peptic ulcer is quite classical in its history. Associated pylorospasm will often cause referred substernal pain which will not respond very well to soda. Pylorospasm often accompanies an irritable colon and will benefit from appropriate treatment. More than laxative attention should be given the constipation which often accompanies a proven peptic ulcer. Magnesium oxide or trisilicate salts given to ulcer patients will not uncommonly initiate the generalized distress of spastic colon pain.<sup>14</sup>

Diaphragmatic hernia will usually be detected by appropriate esophageal and stomach fluoroscopy.

Ovarian, tubal, or uterine inflammation is often accompanied by painful colonic spasm; indeed, spasm of the colon may lead to unfortunate gynecologic surgery. A full therapeutic trial at rest and bowel management often will mitigate pelvic pain when due to organic pathology that is of doubtful

10. Jordan, S. M.: Medical Management of Diseases of the Biliary Tract, *S. Clin. North America* 28: 613-617 (June) 1948.

11. Bockus, H. L.: *Gastro-Enterology*. Philadelphia, W. B. Saunders Co., vol. iii, pp. 528-529 (1946).

12. Cattell, R. B.: Causes of Unsatisfactory Results After Operation on the Gallbladder and Bile Ducts, *Postgrad. Med.* 7: 351-356 (May) 1950.

13. Cole, W. H., and Grove, W. J.: Persistence of Symptoms Following Cholecystectomy with Special Reference to Anomalies of the Ampulla of Vater, *Ann. Surg.* 136: 73-82, 1952.

14. Wilkinson, S. A.: Present Status of the Peptic Ulcer Problem, *J. A. M. A.* 138: 805-807, 1948.

merit for exploration. One should remember that premenstrual tension and menstruation may aggravate functional bowel distress as well as pelvic endometriosis.

It is well known that uremia, pernicious anemia, and thyrotoxicosis upset the gastrointestinal tract (usually causing diarrhea). Chronic intestinal amebiasis may give symptoms identical to those of irritable colon and, in certain geographic areas, painstaking study will be necessary.

The chronic diarrheas are differentiable by metabolic, stool, x-ray, and proctoscopic studies. Diarrhea which awakens the patient or is accompanied by pedal edema will usually prove to be of organic origin. The diarrhea of irritable colon is usually intermittent; it is much more difficult to treat than constipation. Frequently there is remote previous history of recurrent constipation and laxative use. Mucus in the stools may be prominent.

Diverticulosis often seems to be an incidental and almost normal finding in many elderly patients. Careful history, however, will frequently reveal laxative use, altered bowel function, etc. About 10 to 25 per cent of patients with multiple diverticula will eventually develop diverticulitis.<sup>15</sup> Thus diverticulosis when found merits long-term consideration with attention to bowel hygiene where indicated. Severe colonic irritability may persist after diverticulitis has healed.

Gastrointestinal allergy and chronic gastritis will not be discussed. Both are uncommon causes of obvious gastrointestinal symptoms, and rigid criteria for their diagnosis should be used. Most patients on a bowel management program lose their so-called food sensitivities. Vague left upper quadrant or epigastric pain may occasionally reflect chronic gastritis.

Since colonic instability is a functional disorder one must understand the deranged physiology. The right colon receives the liquid ileal contents and absorbs the moisture. No cellulose-destroying enzyme is present in the colon of man, and cellulose breakdown occurs entirely by bacterial action. The proximal colon concentrates the fecal matter and moves it along by predominant peristalsis and some delaying antiperistalsis. The distal colon is a reservoir

which secretes the mucus which lubricates the passage of the hardening and forming feces. Several types of contractive activity occur in the colon, only some of which are propulsive. The contractions are only intermittently coordinated<sup>16</sup> and there is a delicate balance of this neuromuscular apparatus which is easily disturbed by a number of factors, such as alteration of central stimulation (denervation of the rabbit colon stops antiperistalsis),<sup>17</sup> use of harsh laxatives, introduction of irritating foods (especially coarse roughage), and generalized autonomic disturbances characteristic of neurosis. Motor as well as secretory activity is involved, so that all types of functional "colitis" should be considered under one designation. Indeed, the same patient may exhibit all grades of spasm, dilatation, hypermotility and mucus secretion without precise localization of symptoms with reference to motor disturbance in particular portions of the colon. For instance, the patient whose colon evacuates all of a plain barium enema may actually clinically have either constipation or diarrhea.

Experimentally, fixed neuroses in monkeys have been produced<sup>18</sup> with resultant gastrointestinal signs (chiefly diarrhea, weight loss, and food aversion). Many neurotic signs also occurred. In both normal men and in patients judged to have spastic colitis observation of the sigmoid with the subject under a severe stress reaction revealed identical changes in the sigmoid and also in both produced nausea.<sup>19</sup> Fixation of the pattern had apparently occurred in those with spastic colon, thus suggesting that colonic instability is altogether a nerv-

16. Adler, H. F.; Atkinson, A. J., and Jay, A. C.: A Study of the Motility of the Human Colon: An Explanation of Dyspnergia of the Colon or of the "Unstable Colon," *Am. J. Digest. Dis.* 8: 197-202, 1941.

17. Auer, J., and Krueger, H.: Experimental Study of Antiperistaltic and Peristaltic Motor and Inhibitory Phenomena, *Am. J. Physiol.* 148: 350-357, 1947.

18. Masserman, J. H., and Pechtel, C.: Neuroses in Monkeys: a Preliminary Report of Experimental Observations, *Ann. New York Acad. of Sciences* 56: 253-265 (Feb.) 1953.

19. Almy, T. P., and Tulin, M.: Alterations in Colonic Function in Man Under Stress: Experimental Production of Changes Simulating the "Irritable Colon," *Gastro-Enterology* 8: 616-626, 1947.

15. Bockus, H. L.: *Gastro-Enterology*. Philadelphia, W. B. Saunders Co., vol. ii, pp. 680-681.

ous or neurotic disorder.<sup>20</sup> Even one of the major complaints of the functional bowel disorders—flatus—has been shown to be qualitatively and quantitatively the same in patients and in normal individuals.<sup>21</sup> The patient merely is more aware of the normal gas because of the associated spasms of pain. Clinical experience, however, supports the idea of different causative factors, some environmental, some plainly neurotic. Almy believes, however, there is no good evidence for postulating an inborn autonomic imbalance.

#### TREATMENT

While one should always individualize treatment, I believe that in the practice of gastro-enterology we tend to over-individualize therapy with consequent confusion for the patient, medical student and physician. Treatment consists in the first place of somatic measures of general bodily rest and rest for the colon, a non-irritating diet, heat to the abdomen, increased fluid intake, control of constipation or diarrhea, antispasmodics and sedatives, and the avoidance of laxatives and of harsh enemas. Superficial psychotherapy is helpful but good rapport is difficult to establish until somatic treatment effects relief of the true visceral pain which distresses these patients. It is in the instruction of the patient in the nature of his disorder and in the institution of *all* measures of an adequate program that we as physicians may not infrequently fail. All too often after so-called negative studies are obtained the patient is given a sedative and antispasmodic and told to "take it easy," or—worse—the feeling is tactfully left that nothing much is the matter and nothing much is to be done.

Generally speaking, the patient is fully aware that he is nervous—in fact, he will often be on the defensive about his complaints. Even a patient with a normal psyche when in the throes of a sometimes disabling disorder is in a dependent state of mind and must be told explicitly how he must eat and conduct himself.

If a severe case is encountered, then bed rest is in order, together with a low residue

diet in frequent feedings, six or more cups of hot water orally, with application of a hot water bag or heating pad to the abdomen, and administration of belladonna and a barbiturate. Rarely will synthetic parasympatholytic agents be needed. Later, moderate exercise is prescribed. By increments, cooked vegetable and fruit fiber enter the diet. Daily or frequent rectal examinations and oil retention enemas will forestall impactions and reassure the patient. Eventually fairly normal bowel action will be achieved. Where diarrhea instead of constipation occurs the job is doubly difficult and the cellulose fiber, even though cooked, must be used cautiously. Laxatives are not permitted. So-called hydrophilic colloids avoid the issue; the patient must achieve a psychologic victory. Yet he must understand that he will likely always have a variable constitutional intolerance for many foods.

Hydrochloric acid, where absent, should be used, though benefit is variable. Likewise, hyperchlorhydria may require treatment with antacids, especially when pylorospasm is also present.

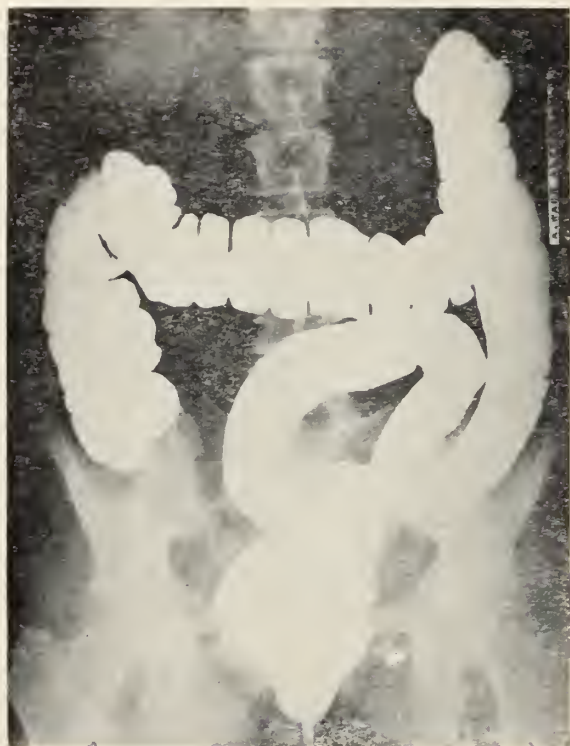
#### CASE PRESENTATION

One case (fig. 1) will indicate the complexities involved. A 55 year old widow first developed epigastric pain 30 years previously while pregnant. The pain was re-



20. Almy, T. P.; Hinkle, L. E.; Berle, B., and Kern, F., Jr.: III. Experimental Production of Sigmoid Spasm in Patients with Spastic Constipation, *Gastro-Enterology* 12: 437-449, 1949.

21. Kirk, Esben: The Quantity and Composition of Human Colonic Flatus, *Gastro-Enterology* 12: 782-794, 1949.



lieved by alkalies. Periodic exacerbations of pain were noted and duodenal ulcer demonstrated on multiple occasions, along with high gastric acids. Her present complaints were postprandial epigastric bloating, continuous hunger distress, "quivering in stomach," pounding of heart, constipation and

many phobias and other bodily complaints. She had been subsisting on milk, crackers, raw eggs and considerable ice cream, and had been taking Alophen and milk of magnesia and a daily tap water enema. She complained of hemorrhoids but examination for this was deferred, at her request. Examination revealed a healthy appearing woman. There was epigastric and left lower quadrant tenderness. Fluoroscopy of the stomach revealed a duodenal deformity without point tenderness. Gastric analysis after Ewald meal showed 40° free and 60° total acid with a volume of 110 cc. Barium enema entered the colon with marked distress to the patient. The sigmoid was elongated and unusually smooth. Despite lack of bowel preparation the patient evacuated nearly all of the enema. It was impossible here to differentiate the ulcer from the bowel distress. Consequently a convalescent Sippy diet with pureed vegetables was prescribed, along with milk and cream and plain aluminum hydroxide and a belladonna-phenobarbital mixture. Hot water in large quantities was taken by mouth and oil retention enemas were used. The patient on ambulant treatment promptly developed a fecal impaction and resort was had to saline enemas and combined aluminum and magnesium hydroxides. Also milk intake was reduced to not more than a quart. There was some improvement but the use of magnesium while convenient has proved a difficulty. This patient obviously needed the exact control of hospitalization, not especially for the ulcer but for the complicating irritable colon with constipation and nervous exhaustion.

Another patient with both an ulcer and "colitis" (diarrhea) has responded satisfactorily but her anxieties were real and could be allayed by study.

#### TREATMENT FAILURES

- (1) Failure to institute complete regimen
- (2) Emotional conflicts unsolvable.
- (3) Uncooperative patients.

} Dependent upon the patience of the physician.

- (4) Missed diagnosis.

(5) Associated disease, especially cholelithiasis, peptic ulcer, and sometimes renal disease. Neither cholelithiasis nor irritable colon, when coincident, responds satisfactorily except to combined surgical and medical therapy. Remove "silent" gallstones.

**SUMMARY**

1. A comprehensive, though simplified, definition of the irritable or unstable colon is given. It is shown that it accounts for the majority of functional gastrointestinal symptoms, including functional epigastric distress. The concept of disturbed colon physiology as a measurable clinical and x-ray phenomenon is emphasized and the point made that roentgen studies of the colon provide more useful information of functional derangement than does the barium meal, though the latter should not be neglected.

2. Differential diagnosis is discussed with

special reference to certain diagnostic pitfalls: chronic non-calculous cholecystic disease, chronic appendicitis, atypical anterior chest pain, postcholecystectomy pain, renal and pelvic disease, and the majority of cases of so-called functional indigestion. Delay is recommended in contemplated elective surgery until the patient has shown that he will not respond to an adequate conservative regimen.

3. A therapeutic program is outlined which stresses rest and hygiene, dietary control, antispasmodic measures and, especially, avoidance of all laxatives.

**SOME INDICATIONS FOR SYMPATHETIC BLOCK**

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It is not the purpose of this paper to discuss all of the indications for sympathetic nerve block or to present any new indication. Instead, only three conditions will be considered. In each case the value of sympathetic block is well proven. All three are not uncommon and are encountered by the general practitioner and by specialists in a number of fields. Sympathetic blocks are easily performed, require no special equipment, and give gratifying results.

**PULMONARY EMBOLISM**

It is becoming evident that pulmonary embolism is commoner than we have believed. Surgeons have been conscious of it for many years as a cause of sudden death or morbidity in postoperative patients. What we had not realized is how often emboli are seen in medical patients. Embolism in the patient who is bedridden, or partly so, is common. The patient kept at bed rest because of a cerebro-vascular accident or a coronary occlusion is an excellent target for phlebothrombosis of the deep veins of the lower extremities and pulmonary embolism. Auricular fibrillation with mural thrombi in the right auricle is another cause. And just because a patient has previously been ambulatory and does not have any clinical sign of thrombosis in a lower extremity does not rule out phlebothrombosis; it is probable that embolism in such cases is usually thought to be pneumonia, if the patient survives.

The prevention of embolism by vein ligation or anticoagulants is not a matter of

discussion here. The question is what to do with the patient who is still alive immediately after a severe embolism, who is dyspneic and cyanotic and is having severe chest pain. It might be mentioned that the Trendelenberg procedure of removal of the clot from the pulmonary artery has not proved to be practical.

The mechanism of the decreased aeration of the blood must be considered first. While this question has not been settled, the most commonly accepted explanation is that the irritating stimulus set up by the embolus in the pulmonary artery causes a severe vasoconstriction in both lungs. The occluded vessel is minor compared to the symptoms produced. Treatment is aimed at blocking the impulses coming from the occluded artery and blocking impulses going to the lungs. A cervical sympathetic block no doubt accomplishes this only partially, as many of the fibers pass through thoracic segments. The anatomy of these pathways and the pathways in the vagus is still not clear. From a purely empiric standpoint, the partial interruption obtained with a cervical sympathetic block is all that is necessary and will give a good result.<sup>1, 2, 3</sup>

1. Sussman, I.; Lempke, R., and Wallace, R.: Stellate Ganglion Block in Cerebral Thrombosis and Embolism, *Am. Practitioner* 3: 669, 1952.

2. Faxon, H. H.; Flynn, J. H., and Anderson, Ruth M.: Stellate Block as an Adjunct to the Treatment of Pulmonary Embolism, *New England J. Med.* 244: 586, 1951.

3. Bageant, W. E., and Rapee, L. A.: The Treatment of Pulmonary Embolus by Stellate Block, *Anesthesiology* 8: 500, 1947.

At this point, the type of cervical sympathetic block used by the author will be described. A number of techniques have been used, but this is probably the safest of all, and it certainly is the simplest. The patient need not be moved from his bed, and there is very little discomfort. The head is turned away from the side to be blocked, and the carotid tubercle, the prominence on the anterior surface of the transverse process of the sixth cervical vertebra, palpated. As this is done, the sternomastoid muscle is automatically pushed forward. A 23-gauge needle, 1½ inches long, such as is used in giving penicillin, is inserted from directly lateral until it touches the tubercle. The needle is then further inserted about 5 mm. medially, anterior to the tubercle, and 10 cc. of 1% of procaine injected. Ordinarily, a Horner's syndrome, flushing of that half of the face and loss of sweating in the same area, will appear within a few minutes or even seconds. A successful block is almost invariable. If the patient is sitting up, the solution will spread downward better and may anesthetize the upper thoracic ganglia. Both sides should not be injected simultaneously, as it is possible to anesthetize the phrenic nerves inadvertently. More than 10 cc. is not advisable, as the solution may spread too far. A friend of the author used 20 cc. on a member of his family and obtained bilateral Horner's syndromes; there was no ill effect, of course, but the incident should serve as a lesson.

It should be emphasized that there is no point in going through any extensive diagnostic procedure before the block. First of all, these people may be in extremis; second, a work-up may not show anything diagnostic even with the patient moribund. If the patient has a swollen leg, chest pain, bloody sputum, and dyspnea, the diagnosis is fairly certain. But leg swelling is often absent, and the diagnosis is doubtful. A block should be done in any suspicious case; nothing is lost if some other condition is present. Relief is dramatic. Pain is relieved, respirations deepen, the respiratory rate decreases, and cyanosis disappears—all within a matter of minutes.

To illustrate, the author happened to see a patient who had been seized with a sudden attack of dyspnea while being helped from his wheel chair to his bed. He was a man in his sixties who had been hemiplegic for several years. The hemiplegia was on the right and the man was almost completely aphasic.

However, it was evident that he was in severe pain; he was gasping for air, and cyanotic under an oxygen tent. Since he was known to have arteriosclerotic heart disease he had been digitalized for a long time. He was not fibrillating. The author is forced to admit that he was not on the alert, and he thought that it was simply a case of cardiac decompensation and pulmonary edema—both lungs were full of crepitant rales. Morphine and atropine had no effect, and when the internist to whom the patient belonged arrived, he suggested that it was a case of pulmonary embolism. The author then did a cervical block with procaine and within 5 minutes the cyanosis and dyspnea were gone, and the patient was comfortable. The effect of the block is rapid, and ordinarily only one block is necessary to break up the vicious circle of impulses permanently.

This particular case brought up also the problem of which side to block. In two such cases where the patient was unable to answer questions, the left side was blocked. Probably either side would be all right; if the block is not on the side of the lesion, it will at least give one functioning lung.

#### CEREBRAL THROMBOSIS AND EMBOLISM

Up until recent years cerebral thrombosis and embolism were regarded with a fatalistic attitude; either the patient died or he got well with more or less serious residuals. Various vasodilators were tried to improve circulation but with doubtful results. It is now established that cervical sympathetic block will cause immediate improvement in the great majority of these patients and reduce the mortality.<sup>4, 5, 6, 7</sup> It is of no benefit in cases of cerebral hemorrhage; whether or not a block is harmful in such cases is being debated at the present time. Some men maintain that a block may make the bleeding worse. If the spinal fluid is bloody,

4. Naffziger, H. C., and Adams, J. E.: Role of Stellate Block in Various Intracranial Pathologic States, *Arch. Surg.* 61: 286, 1950.

5. Volpitta, P. P., and Risteen, W. A.: The Use of Stellate Ganglion Block in Cerebral Vascular Occlusions, *Anesthesiology* 4: 403, 1943.

6. Amyes, E. W., and Perry, S. M.: Stellate Ganglion Block in the Treatment of Acute Cerebral Thrombosis and Embolism. Report of Forty-Four Cases, *J. A. M. A.* 142: 15, 1950.

7. Leriche, R.: Treatment of Embolism and Thrombosis of the Cerebral Vessels: Attempts at Treatment of "Strokes" by Stellate Ganglion Block (Condensed from *Brit. M. J.*), *Am. Practitioner* 3: 669, 1952.

a block should not be done; it would certainly be of no benefit. In a doubtful case the possible benefit outweighs the possible damage, and a block should be done. In a series of 142 cases of thrombosis and embolism, Naffziger and Adams<sup>1</sup> obtained good or fair results—improvement, in other words—in 80% of cases.

The block used is the same as described before. Within a few minutes, the patient's paralysis may clear remarkably. The first patient blocked by the author had a complete paralysis of the right leg, partial paralysis of the right arm, and a complete aphasia. Within a few minutes after the block, he could lift his knee from the bed, raise the arm above his head (but not use the hand), and answer questions with only slight difficulty. The end results of treatment cannot be definitely stated, but it is thought that residual disability will be less and that mortality will be lower. However, there does not seem to be a marked reduction in mortality.

Blocks in this condition must be repeated. Efocaine, or some other long acting anesthetic, will give results lasting for days. Leriche<sup>7</sup> has even done sympathectomies in a few cases, later in the course of the disease.

#### POSTTRAUMATIC HYPERSYMPATHOTONIA

The last of the three indications to be discussed is posttraumatic hypersympathotonia. Often the noxious stimuli set up in an area after an injury will cause a reflex sympathetic overactivity which in turn causes vessel spasm, pain, and more sympathetic overactivity. This sympathetic nerve disturbance, once started, may persist and cause pain long after the injured part has healed. It is the feeling of the author that this general heading — posttraumatic hypersympathotonia — includes causalgia, minor causalgia, reflex sympathetic dystrophy, Sudeck's atrophy, posttraumatic osteoporosis, phantom limb pain not due to neuromas, chronic traumatic edema, and traumatic angiospasm. In other words, they are all the same thing, but the causation or the most prominent symptoms may vary somewhat. Causalgia, for example, is classically secondary to a nerve injury, usually the sciatic or median nerve. Sudeck's syndrome shows marked atrophy of a limb. To get down to the basis of the condition, though, it follows trauma and is characterized by vasospasm, increased sweating, and coldness of the part, and pain. As a result

of the pain, the arm or leg cannot be used, and so there is disuse atrophy and demineralization of the bones.

Of course, true causalgia and a full blown Sudeck's atrophy are seldom seen in everyday practice, but the minor degrees of hypersympathotonia are frequently seen. Their importance is not so much that the rare case will become a crippling Sudeck's atrophy. Rather, they are important because lengthy disability may follow a trivial injury. All of this may be prevented by a simple nerve block.<sup>8-12</sup>

The author was aware of the more severe cases, but the milder ones were not apparent until he began to take care of a number of ski injuries in Colorado. There were numerous sprained knees and ankles, besides a lot of fractures. Skiing is a pretty rough sport. He had occasion to see one man who was unable to walk over six weeks after a minor ankle sprain. The affected leg was dusky, swollen, and sweaty. Marked ankle pain was present. A lumbar block was done, and the pain and discoloration disappeared. By the next day, most of the edema was gone. A second procaine block was done, and on the following day all the edema was gone, and the patient was asymptomatic. It should be emphasized that this man had been unable to walk for six weeks.

As far as a technique of blocks is concerned, the upper extremity can usually be blocked by the cervical route, as previously described. With the patient erect, the fibers to the upper extremity will ordinarily be reached as the solution gravitates downward. If a good result is not obtained, a paravertebral block should be done at T-1 and T-2. As far as the lower extremities are concerned, these are treated by paravertebral lumbar blocks. These may be done with the patient lying on his side or else

8. Betcher, A. M.; Bean, G., and Casten, D. F.: Continuous Procaine Block of Paravertebral Sympathetic Ganglions, *J. A. M. A.* 151: 288, 1953.

9. Spiegel, I. J., and Milowsky, J. L.: Causalgia: a Preliminary Report of Nine Cases Successfully Treated by Surgical and Chemical Interruption of the Sympathetic Pathways, *J. A. M. A.* 127: 9, 1945.

10. Homans, J.: Minor Causalgia Following Injuries and Wounds, *Ann. Surg.* 113: 932, 1941.

11. Bonica, J. J.: Management of Intractable Pain with Analgesic Blocks, *J. A. M. A.* 150: 1581, 1952.

12. Mahorner, H.: Sympathetic Nerve Blocks in Rehabilitation of the Injured Extremity. Report of Cases; and a Discussion of Causalgia, *New Orleans M. and S. J.* 94: 426, 1942.

prone with a pillow beneath the abdomen. An ordinary spinal needle is used, as it is the most generally available type of long needle; it should be  $3\frac{1}{2}$  to 4 inches long. The spines of the 2nd and 3rd vertebrae are located and a point 4 cm. lateral to each of these marked. The needle is introduced directly anterior until the transverse process is encountered. The needle is then directed either above or below the transverse process and angled slightly medially, being introduced for an additional 4 cm. Twenty cc. of 1% procaine are injected in each of the two places. A good block will be obtained in practically 100% of cases.

It is surprising how many cases of post-traumatic sympathetic disorders there are once one begins to look for them. Any physician can probably remember some recent patient who complained of pain for months after a trivial wrist or ankle injury or who had pain and disuse in an extremity long after healing of a fracture. Many of these patients are not neurotics or malingerers.

During the past year the author saw a young colored man who had suffered with pain in his calf and foot for 6 months following a shotgun wound of the thigh. He was hobbling about painfully with a cane. Examination showed atrophy and a cold, very sweaty lower extremity. No sign of sciatic nerve damage could be detected. The patient was very nervous. After one block, the pain was gone—along with the temperature change and excess sweating—and he was able to walk normally. Since the patient had been fearful of having the block done, question arose in the author's mind as to whether the block had stopped a real pain. He, therefore, offered to repeat the block, and the patient accepted without hesitation. There was no doubt as to the benefit in this case. Not too long after, another man was seen with the same kind of pain following a fairly mild crushing injury of his foot two months before; there had been no fracture, but he was still unable to walk. Examination revealed pitting edema of the foot and lower half of the leg. There were no changes in temperature or sweating. It was regarded as a rather doubtful procedure, but a lumbar block was done. His pain disappeared, and he walked without difficulty. On the following day there was still minimal edema of the foot, but he was asymptomatic, and no further treatment was necessary.

In each of these cases a sympathetic block

would have prevented months of pain and disability.

It is probable that most of such cases eventually recover anyway, but there are exceptions. It is a well known fact that in early cases of true causalgia or phantom limb pain, a block or a sympathectomy will usually give a cure but that later on even a cordotomy or ablation of the sensory cortex of the brain may fail. The point is to start treatment as early as possible. If blocks give only temporary relief, then a sympathectomy must be done.

To illustrate the pitiable outcome in some untreated cases, it is worth while mentioning a young colored man seen first in 1949. This man had fractures of two metatarsals in the right foot in 1943. Healing of the fractures was uneventful, but pain and swelling continued. No blocks were done. In 1946 an attempt was made to do a sympathectomy, but apparently only the genitofemoral nerve was removed. Three years later he was still on crutches and could not bear weight on the foot. There was massive edema of the right foot, moderate edema of the leg, profuse sweating of the extremity, and coldness. The patient refused all treatment. In 1951, eight years after the injury, he was seen again and at that time the right leg was unchanged, and the same findings were now present on the left. It is not uncommon for a bilateral Sudeck's syndrome to follow a unilateral injury. The man was a complete wheelchair cripple. He refused treatment and was not seen again. It is questionable how much relief a sympathectomy might have given. The whole thing might conceivably have been prevented by a single procaine block.

#### SUMMARY

1. Pulmonary embolism is a fairly common cause of death. If it is suspected, a cervical sympathetic block should be done. Dramatic relief of pain and dyspnea is obtained in most cases.

2. Cervical sympathetic blocks in patients with cerebral thrombosis will result in immediate improvement in about 80% of cases.

3. Under the term "posttraumatic hyper-sympathotonia" are included the various syndromes of posttraumatic pain associated with excessive sympathetic activity. Sympathetic blocks done early will almost invariably give a good result and may prevent months or years of disability.

## JOURNAL EXCERPTS

### Obstructive Urinary Tract Lesions in Children

—Obstructive lesions of the urinary tract in children are almost entirely of congenital origin and are frequently associated with anomalies of the genital tract as well as of other unrelated parts of the body. They are located at the ureteropelvic junction, the ureterovesical junction, the neck of the bladder and the external urethral meatus. Occasionally obstruction is caused by ectopic position of a ureter. . . .

Duplication is one of the commonest anomalies of the upper urinary tract. If the duplicate ureter opens in normal position at the lateral angle of the trigone and there is no obstruction, it is of no clinical importance. In a large proportion of cases, however, the duplicate vessel opens in an ectopic position, such as the posterior urethra, seminal vesicles, rectum, uterus, vagina, anterior urethra or Bartholin gland. In all such cases drainage is defective and there is hydronephrosis of the renal segment that is served by the ectopic ureter, most often the upper pole. If the duplicate ureter opens into the posterior urethra there may be no symptoms until, infection complicating the condition, the patient has pain in the renal area and recurrent chills and fever. Not infrequently in such circumstances chills and fever follow exercise. Usually in intravenous urograms the pelvis on the involved side appears to be normal but not in a normal relationship to the total renal shadow. In many cases the function of the involved segment of the kidney is reduced to the extent that the contrast medium will not concentrate in it, and the diagnosis then depends upon detailed search of the posterior urethra for the ectopic ureteral orifice. Frequently it can be located by injecting indigo carmine intravenously, then compressing the kidney bimanually during the search to force urine into the visual field. This method is useful, however, only if some degree of function has been maintained in the segment of kidney that drains through the ectopic orifice. Always when the orifice opens distal to the external sphincter there is constant dribbling of urine.

The history of such cases is characteristic. The child urinates at normal intervals and in normal amounts (indicating that there is a bladder and a competent external sphincter) yet is constantly wet. The majority of patients observed by the author were girls. The ectopic orifice was more frequently seen in the posterior margin of the external urethral orifice than in any other location. Pyelo-ureterographic visualization of retrograde catheterization of the ectopic ureter will identify the kidney to which it is attached and show the amount of dilation of the ureter and the renal segment.

Treatment is surgical. In view of the fact that in duplicated pelvises the upper pelvis serves only one-fourth to one-third of the total renal mass, resection of that portion can usually be

accomplished with preservation of enough renal tissue on that side to support life even in the absence of the opposite kidney. In cases in which the involved segment of the kidney has maintained good function the ureter may be reimplanted into the bladder. This would be especially indicated in cases in which the lower pelvis is involved. Anastomosis to the adjoining ureter or implantation into the rectosigmoid colon is not to be considered in the management of ectopic ureters.—*Burns, California Med., September '53.*

**Rehabilitation After a Stroke**—The emotional impact of a stroke is overwhelming to the patient and—we believe—equally to those with whom he associates. For that reason, we feel that the management includes not only the individual afflicted but his family as well. There are certain suggestions regarding the attitude of the latter which can assist immeasurably in the restoration of the patient. We have found that it is wise to forewarn them of possible untoward reactions to be expected: the desire to be alone, incessant weeping for any reason, self-pity, an unreasonable perversity, and even unfounded suspicion, to say nothing of a definite feeling of resentment prompted by the dependency (insecurity) that now appears to be the patient's lot. These character (personality) changes can be counteracted by the family's matter-of-fact acceptance of the aftermath of the stroke. Vocal expressions of sympathy tend to increase the feeling of self-pity; a direct and casual attitude in establishing exercises and rehabilitation schedules can offset the despair of helplessness and despondency that has been or could be engendered.

We have found that the sooner a reasonably normal schedule is established, the sooner will the sense of independence be inculcated. This program should include any suggestions made by the patient himself, thus designating him as a part of the team effort. He should eat with the family, where customary family discussions should be carried on; every attempt should be made to inconspicuously avoid difficult situations which would point to his disability. Above all, it is important to avoid the tendency to treat him as a child; let him gauge his own potential, for too frequently misguided and hopeful relatives set the ultimate goal too high with the resultant emotional distress of frustration. It is unwise to keep all conversations, etc., on the cheerfully "all right" level. Every family has its minor disturbances and the very act of letting a patient share in these problems increases his feeling of being a part of normal household operation.

A stroke patient should not be kept cloistered for the duration of his incapacitation. Rather we find that the visits of friends and relatives are a cheering stimulus to recovery.—*Ferderber, Pennsylvania M. J., September '53.*

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ATLANTA MEETING

SOUTHERN MEDICAL ASSOCIATION

The Fulton County Medical Society, Atlanta, will be host to the Southern Medical Association for the Forty-Seventh Annual Meeting, Monday, Tuesday, Wednesday and Thursday, October 26-29. The Municipal Auditorium will be General Headquarters. It is conveniently located within walking distance of all downtown hotels. In it will be held all official meetings, scientific and technical exhibits, and registration.

The meeting will begin with an Opening Assembly on Monday forenoon, the one activity of the annual meeting open to the public. It will feature the address of the President, Dr. Walter C. Jones, Miami, Florida. There will be two other addresses.

The sections will begin Monday afternoon, and meet in half-day sessions through Thursday forenoon. The sections of the Association are: General Practice, Medicine, Gastroenterology, Neurology and Psychiatry, Pediatrics, Pathology, Radiology, Dermatology and Syphilology, Allergy, Physical Medicine and Rehabilitation, Industrial Medicine and Surgery, Surgery, Orthopedic and Traumatic Surgery, Gynecology, Obstetrics, Urology, Proctology, Ophthalmology and Otolaryngology, Anesthesiology, and Public Health. Associations that will meet conjointly are: Georgia Pediatric Society; American College of Chest Physicians, Southern Chapter; Southern Gynecological and Obstetrical Society; Southern Society of Cancer Cytology; Southern Electroencephalographic Society; and Association for Research in Ophthalmology, Southern Section.

Monday and Tuesday evenings have been set aside for section, alumni and fraternity dinners and for private entertaining. The Annual Dinner, which began in 1950 and has proved a popular feature of the annual meeting, will be on Wednesday evening. The local committee is arranging an interesting program.

The Atlanta meeting will offer both scientific and recreational activities. There is much of historic interest in and around Atlanta. Atlanta has been a recognized medical center for many years. It has many physicians of national and international reputation, an outstanding medical school, Emory University School of Medicine, and a number of splendid hospitals.

Atlanta is a central location for a large part of the territory from which the Association draws its membership. It has adequate travel facilities by air, train and bus. Good roads from all over the territory lead to Atlanta for those who wish to motor.

The local Hotel Committee has set up a Housing Bureau to handle hotel reservations. All requests for hotel reservations should be addressed to the Housing Bureau, Southern Medical Association, 801 Rhodes-Haverty Building, Atlanta 3, Georgia. In writing, be sure to state the type and price of accommodation desired, and anticipated day of arrival. Among the good hotels of Atlanta may be mentioned: Ansley (name changed to Dinkler Plaza), Atlanta Biltmore, Atlantan, Briarcliff, Clermont, Cox-Carlton, 551 Ponce de Leon, Georgia, Georgian Terrace, Henry Grady, Imperial, Peachtree Manor, Peachtree on Peachtree, Pershing, and Piedmont.

Dr. Marion C. Pruitt is General Chairman, and Dr. William A. Selman is Vice-General Chairman. Both were formerly members of the Council of the Southern Medical Association. The Executive Committee is composed of Dr. William G. Hamm, President of the Fulton County Medical Society, Chairman; Dr. Marion C. Pruitt, General Chairman; Dr. William A. Selman, Vice-General Chairman; Dr. Olin S. Cofer, Vice-Chairman of the Council of the Southern Medical Association; Dr. John W. Turner, President-Elect of the Fulton County Medical Society; and Dr. Jack C. Norris, Immediate Past President of the Fulton County Medical Society. Associated with the Executive Committee are twelve committees, each with a chairman and a co-chairman, working diligently to make the Atlanta meeting a success.

Southern Medical meetings have long drawn the outstanding men of every specialty, and the largest number of general practitioners of any group near its territory. The Atlanta meeting will be no exception. Physicians should make their plans now, if they have not already done so, to attend the Atlanta meeting.—*South. M. J.*, Sept. '53.

#### TRACER TECHNIQUE

Tracer technique is probably the greatest precision instrument for diagnosis that has been discovered since 1895, but like the x-ray or any other powerful weapon its po-

tentialities and its limitations must be understood.

This opinion was expressed in a recent number of *Radiology* by K. E. Corrigan, Ph. D., and H. S. Hayden, Ph. D., both of the Harper Hospital of Detroit. *Radiology* is published by the Radiological Society of North America.

"This physical technology will never supplant sound clinical judgment or expert radiological study," the authors added, but "when used carefully in cooperation with the other specialties, its capabilities are almost unlimited."

They presented a report on 2,711 tracer studies conducted on 2,367 patients. Only thirteen instances of either false localization of the lesion or failure to discover the true condition were reported, giving the technique an accuracy record of more than 99.5 per cent.

The authors reviewed the failures, so that new workers in the field might avoid the pitfalls.

"The most serious of these (failures) were three carcinomas of the thyroid which we missed and three cases which we believed to be carcinomas of the thyroid that later could not be proved," they said. "Four were cases of mediastinal involvement; only one of these was an utterly erroneous conclusion and the other three were cases of correct identification of one of two entities present.

"In contrast, we have a total of 119 cases of carcinoma of the thyroid identified correctly by tracer technique, fourteen of which were totally unsuspected at the time tracer study was performed."

In an early instance, a tuberculous abscess was mistaken for a neoplasm, but this was not repeated in subsequent cases. A blockage of the left kidney which had resulted in a collection of a fairly large amount of tracer material was at first believed to be a functioning metastasis from a carcinoma of the thyroid. On a redemonstration, the localization had disappeared.

"Impaired kidney function is not a rare condition and the possibility of interference from this source in the location of a spinal or posterior thoracic metastasis needs to be kept in mind," the authors said.

They pointed out that vitally important spinal metastases are hard to identify and

localize accurately. They also said that where surgical or any other trauma exists, the interpretation of any isotope localization must be approached with extreme caution.

The complete survey of each patient takes six minutes unless aberrant or metastatic localizations are found, in which event more time is needed for complete outlining and identification.

## THE ASSOCIATION FORUM

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

### WHY?

W. A. Dozier, Jr.

Director of Public Relations

The purpose of this article will not be to answer anything; instead, several questions will be asked. All of the questions will be the same, simply "Why?"

At a recent conference made up entirely of medical men, several of those men were talking during a meal. Somehow the conversation got around to the national scene and eventually to the matter of the national debt. Mind you, all these men concerned had been trained in medicine; and all but one in the conversation were practicing physicians. Still two of them not only evidenced no concern over the growing debt but also gave arguments in favor of allowing it to grow ever larger and larger. The usual statements used by proponents of the Keynesian Theory were used as their reasons for feeling as they did. The idea that we have been living beyond our means, that somebody will have to pay in some manner, or even that a day of reckoning will ever come were completely rejected. Why? Of course, another question could be asked. How many people within this professional group and within others are willing to accept the cliches and old saws that have been used so freely for the last twenty years? The paramount question, however, is still why.

Recently a physician was heard to complain about the lack of response to a certain letter. It seems that the letter asked for action on the parts of the men receiving it, and active participation would have been beneficial to those requested to take the action. Still very few of the requests were fulfilled. Why?

Not long ago a group was requested to take action on a resolution. None was tak-

en despite the fact that the resolution would have embarrassed no one and a later rejection of the resolution by the addressee would have hurt no one. Nor would it have placed anyone in a precarious position, for the resolution was nothing more than a request. Although the fulfillment of the request would have been beneficial to all present, the group allowed the resolution to be shunted aside with an inconsequential remark. After the group ended its meeting many members went to the person introducing the resolution and expressed the idea that action should have been taken. Why?

Not long ago some several people were talking to an influential man. These people had gathered and gone to this man with a very definite purpose in mind. After a lengthy conversation on the matter under consideration, the group asked the influential man to give them his ideas on the matter. He did talk, but he certainly did not say anything definite. The group came away without any concrete idea relative to the man's thoughts or stand. All that could be said was they thought he agreed with the group but that they did not want to pursue it any farther. Why?

The word why when used to interrogate makes a very simple question. The answer or answers never seem to be. Why? Perhaps if this could be answered, the answer, too, would be simple.

1954 MEETING  
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APRIL 15-17

## STATE DEPARTMENT OF HEALTH

### BUREAU OF ADMINISTRATION

D. G. Gill, M. D.

State Health Officer

#### TRAGEDY IN BURNS

You may recall a certain frightful accident that occurred in this state a few years ago. Five motherless Negro children were burned to death when their four-room home was destroyed by fire. One two-year-old boy was rushed to a Birmingham hospital after a white neighbor went into the burning building and carried him out. The other four succumbed to the searing flames before anyone could get to them. Neighbors found their charred bodies after the fire had burned itself out.

It was revealed afterward how the Negro family had been living. The mother had died about six months earlier, and an 11-year-old daughter named Gloria had been keeping house for her father and the other children. She and her five-year-old brother John would cook supper for the other children and their father so as to have it ready for him when he returned home from work. The fire was attributed tentatively to defective wiring.

More recently two Huntsville youngsters (sisters) spent five weeks in a Chicago hospital after being seriously burned. They were visiting near Chicago when a playmate threw gasoline onto a fire. They were much more fortunate than those Negro children. For they recovered. But the experience was one they will never forget. And it is almost certain that their parents will not forget it either.

Those young people's experiences with fire are constantly being repeated, except in details, not only in Alabama but all over the country. For burns are a much-too-frequent occurrence. And they often are deadly.

The State Department of Health has in its files some figures showing how serious this danger is. The latest reports, prepared by the Department's Bureau of Vital Statistics, tells us that, in 1950, the latest year for which such information is available, 24

Alabama deaths were attributed to burning farm homes. That was an average of exactly two a month. But of course those who lost their lives in burning farm homes did not constitute the total of those who died in burning buildings. For city dwellings and apartment buildings burn, too. And people are trapped in them too, especially old people and children. Deaths attributed during that 12-month period to burning buildings of all kinds—farm, city and others—numbered 78. Other kinds of burns—falling into the fire, getting too close to hot stoves, allowing clothing to catch on fire and similar tragedies—added 137 to the death rolls. Thirty-seven of them died from burns received on farms.

The State Department of Health does not have any detailed information on those 1950 deaths from burns. But its Bureau of Vital Statistics sent out questionnaires asking for details of those which had occurred in 1948. And what those questionnaires revealed throws a searching light upon the seriousness of this problem.

The victims were predominantly Negroes. That may be surprising when you consider that white people outnumber Negroes in this state by more than two to one. But perhaps it is not surprising when we consider that Negro homes, as a rule, are more flimsily constructed than the homes of white people. Negro homes, too, are more likely to be constructed of inflammable material, such as wood. Negro parents, too, are more likely than white parents to leave their children alone in the house while they work in the fields. So perhaps it is not surprising at all that 39 of the 56 Alabamians who died that year in burning buildings were Negroes.

Those questionnaires brought some interesting details about a few of those deaths.

Someone started a fire with fuel oil. Four people were burned to death when the house caught fire and burned to the ground. The same number lost their lives in another fire that resulted when live coals from a kitchen stove fell onto the floor, setting the building ablaze. Four children in two build-

ings—two in each building—were left at home by themselves. (Their parents, presumably, had to work in the fields.) The buildings burned. There was no one to rescue the youngsters. A hot flue caused a building to burst into flame, fatally burning four people. Two others died when a building was set afire by lightning. Twenty-five deaths were attributed to fires which broke out while the victims were asleep. No information was furnished as to how these fires started. A single blaze accounted for seven of those 25, more than a fourth.

Burns and scaldings are said to rank at the top among all accidents on the basis of the number of young lives they claim. Their toll among infants and slightly older children is especially heavy.

This may be surprising, almost unbelievable, at first. You think of all the many other kinds of accidents that can, and do, happen to youngsters. You recall how many of them are fatal and are inclined to insist that this dubious distinction belongs somewhere else. But it is not so hard to believe that burns and scalds are the top accidental killers of babies when you consider the picture broadly and remember youthful tendencies. Consider, for example, how quickly babies start toward hot stoves or anything else that is hot as soon as their parents' backs are turned. Consider, too, the baby eagerness to play with anything a baby can get his hands on. And have you ever seen a baby who didn't need to be watched, lest he swing onto table covers, even when to pull at them would inevitably empty bowls or pots of hot liquids upon anything or anybody below?

Because of that tendency, parents should never leave pots, kettles or other containers of hot liquids near the edge of a stove, table or sink. This same injunction applies also of course to such containers left on the floor or anywhere else within reach of curiosity-moved hands and fingers. At times of course it is virtually impossible to keep everything hot out of harm's way. But such occasions should be regarded as very special ones indeed. And special precautions should be taken to keep youngsters away. That means keeping an eye on them until the hot liquids can be moved to places of safety. And at such times parents should remain close enough to their children to be able to stop them before they can get into trouble. Naturally, crawling or toddling children and

hot liquids should be removed to a safe distance from each other as soon as possible.

Matches are dangerous. Unless you use a little discrimination when you buy them, those you get will burst into flame when struck against almost any rough surface. So parents need to be careful to buy only the safety kind. That kind, as you probably do not need to be told, strike only on the box. But matches and match boxes go together. And a curiosity-hungry child does not have much trouble finding a rough surface after he finds a match. So keep matches out of reach. That is true of the ordinary kind. It is also true of the safety kind. See that they never leave their places atop mantels or high shelves except when actually in use. Be sure to keep them in a comparatively cool place. If they become too hot, one of them may become ignited. That almost certainly will start a chain of ignitions, and soon the room will be ablaze.

Parents also need to be careful in handling hot liquids at tables. Be especially careful not to hold coffee, tea or soup directly over anyone who is eating. Remember that young children are impulsive and impetuous. A sudden impulse to shove a young fist into the air may bring down a blistering shower. So may a sudden decision to swing around in one's seat. So also may any number of other sudden, swift and unpredictable movements that are so characteristic of childhood. Hot food and beverages should be passed from person to person well inside the outer perimeter of the table. Then, if anything is spilled, about the worst thing that can happen is to ruin a tablecloth, damage the wooden furniture or make an unpalatable mixture of the spilled and unspilled food. That is as nothing compared to a serious burn.

The danger of meeting death or serious injury from burns has long received considerable attention from the American Red Cross. You may recall some of the advice about them published in that organization's first aid books. But several years have passed since the war made most of us definitely first aid conscious. So it might be well to refresh your memories on them. *The American Red Cross First Aid Text-Book* has this advice, still timely:

"Do not attach a percolator or electric iron where someone may trip over it, pulling the apparatus over. . . . To try to go up or down stairs with a baby in one arm and a pail of hot water in

the other hand is dangerous. . . . Do not use open-flame lights where curtains or draperies may blow against them. . . . Do not use lighted candles on Christmas trees. . . . Do not allow inflammable rubbish to accumulate in basements, attics, outbuildings, and such places. . . . Never pour kerosene (coal oil) into a coal or wood stove, even if the fire is believed to be out. . . . Always watch closely any liquid boiling on a stove. . . . Never pour water on flaming grease; pour salt, sand or soda (bicarbonate) on the flames, or cover with a metal lid."

The following bits of caution are also quoted from the same publication:

"The floor beneath a stove should be protected with a sheet of metal. All pipes should be in good condition and all connections tight. An open grate or fireplace should be protected by a metal screen. . . . Care should be used in disposing of partially smoked cigars and cigarettes. Smoking in bed causes many serious burns and fires. . . . Cleaning with inflammable liquids, such as naphtha or gasoline, should never be done in a closed room or near a flame. These are dangerous even under the best conditions. Fireproof cleaning fluids are the safest. . . . Do not hang clothes near a stove or pipe to dry. This caution applies especially to clothing that has been freshly cleaned with inflammable cleaning fluid.

"Be careful about rubbish and bonfires. Particularly, do not allow children to play near them. . . . A small fire extinguisher may be kept in every automobile and home."

Shock is a more serious danger in burns than you probably realize. Actually, shock is believed to cause more deaths resulting immediately from burns than the heat itself. A well known authority on the subject has said: "Deaths occurring during the first day or two after the burn result chiefly from shock." Deaths following serious burns, but not immediately, are said by the same authority to "result chiefly from infection." Parents should keep this in mind whenever you are called upon to render first aid after members of your families have been severely burned. You should also keep in mind your obligation to do whatever you can to relieve the extremely excruciating pain that always accompanies severe burns.

Generally speaking, it is not the severity of the burn itself that determines the victim's chances of survival. The determining factor is the extent of the area affected. That is, an extremely intense burn affecting, say, the tip of the finger may be far less likely to prove fatal than a relatively slight burn affecting, say, the chest and abdomen. When burns are severe or cover a wide area, the victim's relatives or friends should

get him to a doctor as soon as possible. The most serious cases of course should be taken directly to hospitals where there are facilities for treatment not at hand in the average doctor's office. Until professional medical care can be obtained, first-aiders should be careful not to do unwise things. One thing to be avoided is the application of oils or greases to the affected areas. Having to get them off may interfere with the doctor's work and delay the use of proper procedures. First-aiders, however, can help in other ways. They can, for example, and should, remove all loose clothing covering the burned areas. This should be done with great care of course and with a minimum of pain to the victim. Do not hesitate to use a knife or scissors to cut away any clothing that may be hard to remove otherwise. At the same time, however, do not try to remove clothing that has become attached to the burned area. This needs to be done by an expert, the doctor. Eager, clumsy attempts to separate cloth from charred skin may do great harm.

If it is impossible to obtain medical attention fairly promptly, certain first aid measures may be resorted to. One consists of soaking sterile gauze in a tepid solution of baking soda and applying it to the affected area. If the sterile gauze is not to be had at such a time—and often it isn't—a freshly laundered cloth will serve. If possible, boil the water and let it cool somewhat. About two or three heaping tablespoonfuls of soda should be used to a quart of water. If there is not time for boiling, or if no facilities are available for that, it is reasonably safe to use hot water from the faucet. If that too is lacking, almost any clean water will do. But it should be warm. The basin should also be clean of course. The bandage should be left fairly loose.

Remember that time is of the essence where burns are concerned. Do all you can to avoid them. Make it as unlikely as possible that your children will be burned. And, if being careful is not enough to keep burns away, act quickly. See that the victim—yourself or some member of your family—gets the best possible attention. And see that he gets it at once.

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From the evidence now available, there is no indication that shortly there may be a significantly decreased need for beds for tuberculosis patients.—*Comm. on Therapy, Am. Rev. Tuberc., May 1953.*

**BUREAU OF LABORATORIES**

Thomas S. Hosty, Ph. D., Director

**SPECIMENS EXAMINED**

July 1953

Examinations for diphtheria bacilli and Vincent's .....	140
Agglutination tests .....	1,420
Typhoid cultures (blood, feces, urine and other) .....	594
Brucella cultures .....	24
Examinations for malaria .....	287
Examinations for intestinal parasites .....	3,763
Serologic tests for syphilis (blood and spinal fluid) .....	24,172
Darkfield examinations .....	7
Examinations for gonococci .....	1,663
Examinations for tubercle bacilli .....	3,458
Examinations for meningococci .....	0
Water examinations .....	2,141
Examinations for Negri bodies .....	135
Milk and dairy products examinations .....	4,545
Miscellaneous .....	1,568
Total .....	43,917

**BUREAU OF PREVENTABLE DISEASES**

W. H. Y. Smith, M. D., Director

**CURRENT MORBIDITY STATISTICS**

1953

	June	July	E. E.* July
Typhoid and paratyphoid fever .....	6	2	9
Undulant fever .....	1	3	1
Meningitis .....	13	4	11
Scarlet fever .....	22	17	21
Whooping cough .....	21	17	96
Diphtheria .....	9	8	16
Tetanus .....	0	5	4
Tuberculosis .....	216	141	226
Tularemia .....	1	0	0
Amebic dysentery .....	8	9	2
Malaria .....	2	8	44
Influenza .....	193	9	29
Smallpox .....	0	0	0
Measles .....	203	49	124
Poliomyelitis .....	103	92	59
Encephalitis .....	0	1	1
Chickenpox .....	49	11	13
Typhus fever .....	0	9	22
Mumps .....	121	76	46
Cancer .....	332	443	317
Pellagra .....	1	3	3
Pneumonia .....	102	73	101
Syphilis .....	160	155	897
Chancroid .....	4	10	14
Gonorrhea .....	305	345	531
Rabies—Human cases .....	0	0	0
Positive animal heads .....	56	47	0

As reported by physicians and including deaths not reported as cases.

\*E. E.—The estimated expectancy represents the median incidence of the past nine years.

**BUREAU OF SANITATION**

Arthur N. Beck, M. S. in S. E., Director

**HOW CLEAN ARE OUR CITIES?**

Contributed by

G. R. Wright, B. S., M. S.

Pub. Health Engineer

Just how clean are our cities and what are the criteria by which they may be judged? What factors should be given consideration with regard to accepted public health practices of basic sanitation concerning water, sewage, milk, garbage, insects, rodents and many nuisances which are indicative of good community living?

Public water supplies, once a disease-supporting necessity, have developed in keeping with engineering and scientific knowledge to the extent that they are no longer regarded with suspicion. Under the guidance and supervision of the State Department of Public Health, safe water is accepted as a matter of course in Alabama. It is significant that the consumers of approximately 200 million gallons per day rarely question the bacteriologic quality of the water.

Sewage, comprised of water that has been subjected to domestic use, has in many instances been rendered relatively harmless by various treatment processes. Premises not having adequate water borne facilities have been provided with various types of questionable substitutions, including ground burial and surface disposal. Houses with no toilet facilities are not uncommon.

Milk, recognized as an ideal medium for many disease-spreading bacteria until it is subjected to adequate treatment, may be obtained safely pasteurized throughout the state. Raw milk may be purchased in many localities, although this product is regarded with suspicion and is not recommended. Dairies are inspected and samples are collected and analyzed by health department personnel at regular intervals in order to determine the degree of efficiency attained during the periods of producing and processing.

Garbage collection and disposal have also progressed following the demands made upon those concerned and the development of special equipment and methods of disposal. Many of our cities have procured packer-type trucks that have resulted in a great saving in operation and provided excellent means of transporting the normal items found in domestic garbage. In recent years

a great deal of interest has been directed toward the type of container being used on premises which has resulted in standardization of capacities, types, materials, covers, etc. Enclosed sheet iron containers, transported by special vehicles, have replaced the old garbage boxes in many industrial areas. Streets, alleys, and private premises are free from unsightly material as a result of this practice. Fly and mosquito production, as well as the rat population, is greatly reduced. Complete elimination of breeding sources, food supply and harborage will produce a noticeable effect on the general insect and rodent population.

Sanitary landfills are recognized as the practical solution to the garbage disposal problem under almost any condition. The earth moving equipment required has limited the acceptance of this method of disposal in many of our small cities and towns. Failure to utilize available equipment has been observed in many instances. It appears that garbage dumps, well removed from populated areas and burned frequently, will of necessity be resorted to for many years.

Insect and rodent control measures, in the form of residual spray, larviciding, and poisoning campaigns, are instituted each year in many of our cities. These have become established as auxiliary methods and are used in conjunction with good sanitation programs. Such control measures will not be highly effective unless consideration is given to the basic factors involved in insect and rodent production.

Complaints arising from foul odors, animal shelters, trash accumulations, etc. are frequently encountered. If a well organized sanitation program is being conducted these situations may be corrected with very little difficulty. Without the support of a city-wide program that gives consideration to all influencing factors there is little need to become concerned or jeopardize the possibility of a good program by agitation of offenders in isolated cases.

Many of our cities are utilizing the services of their local county health departments to conduct surveys, analyze the findings, and inaugurate programs that will provide clean living conditions. Cities that fail to take advantage of these services, or health authorities who neglect the promotion of this type of program, should give the overall sanitation problems further consideration.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR MAY 1953  
COMPARATIVE RATES

Live Births Stillbirths and Deaths by Cause	Number Registered During May 1953			Rates* (Annual Basis)		
	Total	White	Colored	1953	1952	1951
Total live births.....	5806	3576	2230	21.6	22.2	23.3
Total stillbirths.....	183	89	94	30.6	29.2	29.0
Deaths, stillbirths excluded.....	2166	1308	858	8.0	8.3	8.4
Infant deaths— under one year.....	210	112	98	36.2	33.0	27.4
under one month.....	157	86	71	27.0	21.9	20.3
Cause of Death						
Tuberculosis, 001-019.....	39	17	22	14.5	21.8	27.5
Syphilis, 020-029.....	8	4	4	3.0	4.1	6.1
Dysentery, 045-048.....	2		2	0.7	1.1	0.4
Diphtheria, 055.....	1	1		0.4		
Whooping cough, 056.....					0.8	0.8
Meningococcal infections, 057.....	1	1		0.4	0.4	0.4
Poliomyelitis, 080, 081.....	1		1	0.4	0.4	
Encephalitis, 082, 083.....	1		1	0.4		0.4
Measles, 085.....					1.9	1.9
Malignant neoplasms, 140-205.....	268	186	82	99.5	86.9	83.7
Diabetes mellitus, 260.....	30	21	9	11.1	9.4	8.0
Pellagra, 281.....	1	1		0.4	1.1	1.1
Vascular lesions of central nervous system, 330-334.....	282	170	112	104.7	97.1	104.3
Other diseases of nervous system and organs of special sense, 340-398.....	17	11	6	6.3	12.4	13.0
Rheumatic fever, 400-402.....	4	3	1	1.5	1.1	2.3
Diseases of the heart, 410-434.....	496	346	150	184.2		
Hypertension with heart disease, 440-443.....	168	82	86	62.4		
Diseases of the arteries, 450-456.....	36	23	13	13.4	15.0	12.2
Other diseases of circulatory system, 444-447, 460-468.....	39	14	25	14.5	11.7	9.9
Influenza 480-483.....	14	10	4	5.2	6.0	10.3
Pneumonia, 490-493.....	58	32	26	21.5	27.5	29.0
Bronchitis, 500-502.....					2.6	0.4
Appendicitis, 550-553.....	7	4	3	2.6	1.5	1.5
Intestinal obstruction and hernia, 560, 561, 570.....	10	7	3	3.7	5.3	4.6
Gastro-enteritis and colitis (under 2), 571.0, 764.....	8	3	5	3.0	3.0	1.1
Cirrhosis of liver, 581.....	8	8		3.0	4.1	3.4
Diseases of pregnancy and childbirth, 640-689.....	7	2	5	11.7	16.5	27.0
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 681, 682, 684.....						6.4
Congenital malformations, 750-759.....	29	23	6	5.0	4.4	2.9
Accidental deaths, total 800-962.....	147	86	61	54.6	63.6	64.2
Motor vehicle accidents, 810-835, 960.....	57	32	25	21.2	24.5	28.7
All other defined causes.....	394	222	172	146.3	131.4	143.3
Ill-defined and unknown causes, 780-793, 795.....	90	31	59	33.4	36.9	31.7

\*Rates are expressed as follows: birth and death rates per 1,000 population; infant death rates per 1,000 live births; stillbirths per 1,000 deliveries; maternal deaths per 10,000 deliveries; deaths from specified causes per 100,000 population.

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## BOOK ABSTRACTS AND REVIEWS

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**Diseases of the Heart and Arteries.** By George R. Hermann, M. S., M. D., Ph. D., F. A. C. P., Professor of Medicine, University of Texas, Fourth edition. Cloth. Price, \$12.50. Pp. 652 with 215 illustrations. St. Louis, Mo.: The C. V. Mosby Company, 1952.

This fourth edition of one of the better textbooks on cardiovascular diseases has been revised to include the more recent advances in concepts, diagnostic techniques, and treatment. It is an excellent book to be used as a guide by the student as well as the busy physician.

It is rather complete in its coverage of the cardiovascular field, yet not exhaustive. It has sections covering the embryologic development of the heart, cardiac radiology, electrocardiography, phonocardiography, electrokymography, tomography, and congenital heart disease, as well as containing sections on the common cardiovascular disorders. There is an interesting section pertaining to nervous disorders with heart manifestations, as well as an interesting, though brief, section on surgical risks in cardiac patients. The chapter on military cardiovascular examinations will be of interest to many physicians who have served, or will serve, in the armed forces.

The material is well organized, and it is felt that desired information can readily be located in this text. It would be a useful addition to the library of all physicians who are confronted with cardiovascular problems.

R. Ross McBryde, M. D.

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**Textbook of Surgery.** By H. F. Moseley, M. A., D. M., M. Ch. (Oxon.), F. A. C. S., F. R. C. S. (Eng.), F. R. C. S. (C), Assistant Professor of Surgery, McGill University; Associate Surgeon, Royal Victoria Hospital, Montreal, Canada. With foreword by G. Gavin Miller, M. D., C. M., M. Sc., F. R. C. S. (C), F. A. C. S., Chairman of the Surgical Department, McGill University; Surgeon-in-Chief, Royal Victoria Hospital, Montreal, Canada. Cloth. Price, \$15.00. Pp. 920, with 460 text illustrations and 46 color plates. St. Louis: The C. V. Mosby Company, 1952.

This textbook of surgery is aimed directly at the medical student. The emphasis has been based on sound principles rather than details, particularly the details of specific techniques. The text is written by the younger men on the surgical staff of the Royal Victoria Hospital of Montreal. The book is liberally illustrated with 460 figures and 46 color plates. The text is rather brief and to the point. In many instances more space is devoted to anatomy, physiology and the clinical picture than to actual surgical treatment. Consideration of gynecologic surgery is condensed into one short chapter entitled, "The Abdominal Aspects of Gynecology."

As stated in the preface, the book is written primarily for the medical student. It should serve admirably as a starting point for the student as he embarks on the ocean of today's literature. It provides a ready reference book, but it does not have enough details of treatment to be of much use to the practicing physician.

John M. Cameron, M. D.

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**Principles and Methods of Physical Diagnosis.** By Simon S. Leopold, M. D., Associate Professor of Clinical Medicine, School of Medicine and Graduate School of Medicine, University of Pennsylvania; Director of the Teaching of Physical Diagnosis, School of Medicine, Chief of the Thoracic Clinic, Hospital of the University of Pennsylvania. First edition. Cloth. Price, \$7.50. Pp. 430, with 390 illustrations and 19 color plates. Philadelphia: W. B. Saunders Company, 1952.

This is the first edition of a text on Physical Diagnosis assembled by an individual who has taught the subject for many years. The material consists simply of the complete examination of the patient with an effort being made to correlate physical signs with the physiologic and pathologic changes of disease.

Of particular interest is the chapter on Sounds from the Thorax: Acoustic Principles, by Dr. S. Reid Warren, Jr. This section attempts to correlate some of the commonly used physical diagnostic procedures involving sounds emanating from the thorax with the acoustic principles upon which the generation and detection of these sounds are based. This chapter will be of value to those physicians who have retained enough knowledge of physics to appreciate it.

The material is logically arranged, concise, and well written, though it necessarily follows the pattern of the majority of books on physical diagnosis. It is an excellent book for students or any physician who desires to reevaluate his methods and abilities in physical diagnosis.

R. Ross McBryde, M. D.

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The past fifty years have been momentous in the fight against tuberculosis. At the outset it was found that the control of the disease was the problem both of the physician and the layman. . . . The achievements have been substantial. Our horizon has been raised to new and challenging vistas beyond. Despite our gains, we still are dealing with a serious killing disease that has sacrificed countless lives that should have been preserved for productive effort. So far as we can see at this time, tuberculosis will be with us for many decades to come. But we are drawing nearer to a complete understanding of its cause and control, which is beyond the tubercle bacillus alone.—H. R. Edwards, M. D., *Am. Rev. Tuberc.*, March 1952.

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## RECENT TRENDS IN CONGESTIVE HEART FAILURE AND METHODS OF TREATMENT

F. BERNARD SCHULTZ, M. D.

Montgomery, Alabama

Sir James Mackenzie, one of the fathers of cardiology, decided to become a heart specialist on a night that he sat helpless beside a young woman about to bear a child, and whom he watched die of sudden heart failure.<sup>1</sup>

Should one now attempt to quote all the literature on congestive heart failure and mention the various types of treatment, both good and bad, neither time nor space would permit. In the past decade so much has been said and written on these subjects that we are now dealing with a problem that cannot be solved by giving digitalis and prescribing bed rest. The patient with congestive heart failure is the subject of unlimited medical research and knowledge. The object of this paper is to place before you a few fundamental facts as to what congestive heart failure is and what to do for it. I purchased a book entitled, *Diseases of the Heart*, by Dr. Charles K. Friedberg of Mount Sinai Hospital. It contains one thousand and eighty-one pages about an organ within the body which is the first to live and the last to die.

Heart failure, as defined by Yater,<sup>2</sup> is congestive failure regardless of the etiology,

Cardiologist, formerly Kuakini Hospital; Cardiac Consultant, Territorial Hospital, Veterans Administration, U. S. Public Health Service, U. S. Rehabilitation of the Territory of Hawaii; now with the Veterans Administration Hospital, Montgomery.

1. Wilson, R. McNair: *The Beloved Physician*, John Murray, Albemarle Street, W. London, England, 1946.

2. Yater, Wallace M.: *Fundamentals of Internal Medicine*, ed. 3, D. Appleton-Century Company, Inc., New York, 1949.

although in some cases of coronary artery sclerosis death may occur suddenly before congestion becomes manifest. White<sup>3</sup> states that "myocardial insufficiency giving rise to congestive failure is the commonest of the important functional disorders of the heart." Levine<sup>4</sup> is of the opinion that it is no simple matter to analyze in detail the nature and exact mechanism of congestive heart failure. Wiggers<sup>5</sup> writes: "Disease of the heart valves, chronic hypertension, progressive coronary sclerosis, etc. generally lead to several dynamic changes, such as a stage of diminished cardiac reserve, a stage of circulatory imbalance or 'congestive failure,' characterized by venous engorgement, cardiac enlargement, cyanosis, dyspnea at rest and edema." Heart failure ("cardiac decompensation"), according to Best and Taylor,<sup>6</sup> is one which is quite common to all of us; namely, when the heart is unable to maintain an efficient circulation during rest or mild exertion the condition of heart failure exists. Boyd<sup>7</sup> speaks of circulatory failure and divides failure into two groups, cardiac insufficiency and peripheral

3. White, Paul D.: *Heart Disease*, ed. 3, page 749, The Macmillan Co., New York, 1945.

4. Levine, Samuel A.: *Clinical Heart Disease*, ed. 3, page 252, W. B. Saunders Company, Philadelphia & London, 1945.

5. Wiggers, Carl J.: *Physiology in Health and Disease*, ed. 4, page 677, Lea & Febiger, Philadelphia, 1944.

6. Best, Chas. H., and Taylor, Norman B.: *The Physiological Basis of Medical Practice*, ed. 4, page 221, Williams & Wilkins Co., Baltimore, 1945.

7. Boyd, William: *The Pathology of Internal Disease*, ed. 4, page 55, Lea & Febiger, Philadelphia, 1945.

insufficiency, the former group being divided into left and right ventricular failure.

Among the common causes of heart failure are those diseases in which the valves of the heart are defective as a result of pathologic processes such as occur in rheumatic fever and congenital defects. *Cor pulmonale* (in which the right side of the heart fails) and which is often missed, anemia, hypertension, thyrotoxicosis, and shock, together with some of the arrhythmias, are etiologic factors. In some areas syphilis still plays an important etiologic role. There are still many others which could be mentioned. Generally, cardiac failure denotes that the output of the heart is insufficient for the needs of the tissues.<sup>8</sup>

It has long been known that the mechanism of failure has brought forth two vigorous schools of thought, namely, forward failure and backward failure, as well as a combination of the two. Without going into detail, for the moment, let us say that in forward failure there is an insufficient output of the heart while, in the latter, there is congestion in various parts of the body with an accumulation of blood from the periphery back to the right side of the heart.

In forward failure, we must mention Starling and his law of the heart, in which he expresses the fundamental principle of cardiac behavior: "The energy set free at each contraction of the heart is a simple function of the length of the fibers composing its muscular walls."<sup>9</sup> When these muscular walls give out, failure results. It is quite significant that the above statements can easily bring forth many pros and cons, yet, as Levine so ably puts it, "it is important to look upon the left and right portions of the heart separately." It is often possible clinically to distinguish either right or left sided failure, notwithstanding the fact that one generally sees the results of failure of both sides.

In left sided failure, the earliest symptom is dyspnea, followed by sequelae ably described by Herrmann.<sup>10</sup> He shows that at the height of left ventricular failure, with

extreme pulmonary engorgement, the tricuspid ring may dilate and permit regurgitation. It is at this point that the right side of the heart begins to fail, though for the moment the left side appears to be relieved, when, in fact, the right side is now in a precarious situation from back pulmonary pressure, together with an accumulated engorgement below the right heart. If one should examine the liver at this point, he would find the liver lobules walled off, forming venous lakes. This is one of the reasons we have an increase in the size of the liver, together with tenderness of this organ, the clinical picture of engorged liver with edema becoming manifest.

In these two schools of thought our friends Harrison<sup>11</sup> and Herrmann<sup>12</sup> are somewhat in disagreement with Wiggers<sup>5</sup> in Cleveland. Wiggers believes that venous engorgement is not without importance and that decreased cardiac output alone could produce the symptoms associated with congestive failure, but it is his feeling that disproportion between arterial pressure over peripheral pressure is the primary factor.

In Honolulu, using the technique of Cournand,<sup>13</sup> we<sup>14</sup> have catheterized the right heart in a number of patients and secured an insight into some of the physiology of the circulation which is bearing out a part of the early work of Katz and Mendlowitz,<sup>15</sup> and also of Bing.

Certainly one of the factors which influence the cardiac output is peripheral resistance and the tissue requirements in the total vascular bed. These and other factors were pointed out by Stead and Warren.<sup>16</sup>

As in the tetralogy of Fallot, it is clearly

11. Harrison, T. R.: *Failure of the Circulation*, Williams & Wilkins Co., Baltimore, 1939.

12. Herrmann, George R.: *Disease of the Heart & Arteries*, C. V. Mosby Co., St. Louis, 1946.

13. Cournand, A.; Riley, R. L.; Breed, E. S.; Baldwin, E., and Richards, D. W., Jr.: *J. Clin. Investigation*, 24: 106, 1945

14. Schultz, F. Bernard; Kawasaki, I., and Lee, Edm.: *Catheterization of the Right Heart in a Young Chinese Male*, St. Francis Hospital, Clinical Findings, Honolulu, T. H., vol. 1, No. 1.

15. Katz, Louis N., and Mendlowitz, M.: *Heart Failure Analyzed in Isolated Heart Circuit*, *Am. J. Physiol.* 122: 262, 1938.

16. Stead, E. A., and Warren, J. V.: *Arch. Int. Med.* 80: 237, 1947; *Modern Concepts of Cardiovascular Disease* 16: December 1947.

8. Freidberg, Chas. K.: *Diseases of the Heart*, page 1, W. B. Saunders Co., Philadelphia, 1949.

9. Starling, E. H.: *The Linacre Lecture on the Law of the Heart*, Longman, Green & Company, London, 1918.

10. Herrmann, George R.: *Modern Concepts of Cardiovascular Disease*, vol. X, July 1941.

shown by Taussig<sup>17</sup> that when the oxygen is not sufficient not only do the tissues suffer but the myocardium loses its efficiency. This is further pointed out and proved by Prinzmetal<sup>18</sup> et al. in their unique studies of "ballooning" of the myocardium after tying off the coronary vessels. Katz,<sup>19</sup> in a masterful discussion and by personal communication on coronary disease, suggested that excessive demands by the body are the salient factors in the oxygen demand by the myocardium even though the individual may not be cognizant of such demands.

We are all quite in accord that, when the myocardium is weakening, the heart does not have the ability to expel blood from the ventricles. This lack of expelled blood to vital organs, especially the kidneys, brings up a most important phase in the mechanics of failure. When the pressure at the kidney falls (and actually the decrease in the renal flow is greater than the cardiac output), the urine becomes scanty and concentrated and especially low in sodium content. It might be well to add here that a similar condition exists in shock from hemorrhage and as in this latter condition there is a marked decrease in glomerular filtration. This was pointed out very clearly by Lauson, Bradley and Cournand<sup>20</sup> in their studies of the renal circulation in shock. During the past war, especially on December 7th, 1941, the day of the outbreak, the prolonged hemorrhage suffered in many cases brought to Tripler General Hospital in Honolulu certainly must have affected the kidneys, since they were unable to respond to transfusion, most likely due to lack of filtration.

So it must be considered in long chronic failure, even though we restore the myocardium by the use of digitalis and increase the output, the damage already done to the kidney in a great many instances makes our use of this drug of little avail.

With our recognition of the important role the kidney plays in the mechanism of heart failure we now have a comparatively new field opening up, a poor salt and water metabolism as a principal cause of failure.

It is here that we reach a most important phase in the treatment of congestive heart failure. The advances which have been made in the treatment of congestive failure are tremendous, yet today many shun the use of glycosides and the mercurials and too many of us have overlooked a most important factor—diet.

Early proponents of diet in the treatment of hypertension (as a cause of heart failure) were Ambard<sup>21</sup> in France, Allen and Sherrill<sup>22</sup> in this country, and Volhard<sup>23</sup> in Germany. These investigators felt that a restriction of salt was beneficial because of the chloride. These investigators overlooked the sodium. Fishberg<sup>24</sup> in his early edition of "Hypertension and Nephritis" felt that "rigid salt restriction did not render its general use worth while." Probably this was because Fishberg at that time only advocated moderate restriction of salt.

In 1944, Kempner<sup>25</sup> reported excellent results with his diet of rice and certain fruits and vegetables—all of which were low in sodium. The once popular and still used Karrell<sup>26</sup> diet, consisting of 800 cc. of milk, with no other food or fluid, did work because 800 cc. of milk contain approximately only 1.0 gram of sodium chloride.

It has long been the custom in our hospitals, when a cardiac patient is admitted, to place him on a low sodium diet. The dietitian dutifully prepares the daily trays to contain about 3.0 grams of sodium chlo-

17. Taussig, Helen B.: Congenital Malformations of the Heart, The Commonwealth Fund, New York, 1947.  
18. Prinzmetal, Myron; Schwartz, Lois L.; Cor-day, Eliot; Spritzler, Ramon; Bergman, H. C., and Kruger, H. E.: Studies of the Coronary Circulation, Ann. Int. Med. 31: 429, 1949.  
19. Katz, Louis N.: A Survey of Recent Developments Concerning the Concepts of Coronary Disease and its Management, Ann. Int. Med. 27: 705, 1949. Personal Communication, Michael Reese Hospital, Chicago, 1948.  
20. Lauson, H. D.; Bradley, S. E., and Cournand, A.: Renal Circulation in Shock, J. Clin. Investigation 23: 381-402, 1944.

21. Ambard, L., and Bamard, E.: La Retention Cholorine Seche, Semaine Med. 25: 133 (Mar. 22) 1905.  
22. Allen, F. M., and Sherrill, J. W.: The Treatment of Arterial Hypertension, J. Metab. Research 2: 429 (Oct.) 1922.  
23. Volhard, F.: Die Behandlung der Sklerosen, in von Bergman, G., and Staebelin, R., Handbuck der Inneren Medizin, Berlin, Julius Springer, vol. 6, pt. 2, pp. 1753-1782.  
24. Fishberg, A.: Hypertension & Nephritis, Lea & Febiger, Philadelphia, 1939.  
25. Kempner, W.: Treatment of Kidney Disease and Hypertensive Vascular Disease with Rice Diet, North Carolina M. J. 5: 125 (Apr.), 273 (July) 1944; 6: 62 (Feb.), 117 (Mar.) 1945.  
26. Karrell, Philippe: De la cure de lait, Arch. Gen. de Med., 1866, vol. 128, O. S. Series 6, vol. 8, 513-533.

ride. The patient is usually limited to 1500 cc. of fluid. Some of these patients do fairly well (even with sodium luminal H. S.). It was not until the work of Schroeder,<sup>27</sup> Schemm,<sup>28, 29</sup> Bridges, Wheeler and White<sup>30, 31</sup> and Wheeler and White<sup>32</sup> that recommendations were made based upon clinical investigation that the sodium intake be restricted to as little as 1.0 gram per day. Today our diets go as low as 200 mgm. of sodium.

With this marked restriction of sodium chloride Schroeder<sup>27</sup> felt that fluids in large amounts would not cause an accumulation of liquids in the body. Using Schroeder's theory, Schemm<sup>28, 29</sup> actually forced fluids but added to his diets foods which yielded a neutral acid ash residue.

After reading Schemm's observations and those of Newman et al.,<sup>33</sup> the writer tested the method of treatment as to its efficiency as well as any advantages over other current methods. Due to the vast difference in the size of Newman's institution and ours, the series which we ran was about one third that of Newman and his workers. However, in the cases which we followed with the Schemm regimen, we are in accord with the findings of Newman, in that none of our patients showed any beneficial effects when the Schemm regimen was used alone without the addition of mercurial diuretics in

conjunction with high fluid intake. At the present time we are having excellent results with a series of patients (to be reported later) in which we are using a low sodium (not to exceed 1.0 gram of sodium) acid ash diet and allowing the patient to have up to 2500 cc. of fluid, using mercurials only when indicated. This is in accord with Boas<sup>34</sup> who states "that those in whom heart failure is stubborn and persistent should be restricted to a sodium diet which contains less than 1.5 grams of salt. Such a diet in severe cases achieves dehydration that cannot otherwise be obtained." In fact, in milder cases, the patient gets along nicely with fewer doses of mercurials.

It is necessary here to bring up some later work by Schroeder<sup>35</sup> and his group on the subject of the value of low sodium diet in hypertension. He points out that in over half of twenty-two patients who exhibited hypertension in its severer stages, the response to salt restriction was poor in their hypertensive state. It must be realized that in this work Schroeder was dealing strictly with hypertension, and actually this was not a very large series and a series in which other factors such as psychic, weight, and proteins were encountered. In discussing Schroeder's work, Dr. Fred Allen pointed out (Allen and Sherrill<sup>22</sup>) that in animal experiments which excluded the factors of psychic, weight, etc., strict salt restriction offered the best results.

At the A. M. A. annual session in Atlantic City, June 9th, 1949, Schroeder presented an excellent paper entitled Renal Failure Associated with Low Extra Cellular Sodium Chloride.<sup>36</sup> It has long been known that the rapid loss of fluids in congestive failure likewise depletes the body of necessary sodium, especially in older individuals, and it has been customary, at least with the teachings of Batterman,<sup>37</sup> to add salt to the diet in these cases. Again too, I feel that the

27. Schroeder, H. A.: Studies on Congestive Heart Failure. I. The Importance of Restriction of Salt as Compared to Water, *Am. Heart J.* 1941, XXII, 141-153.

28. Schemm, F. R.: A High Fluid Intake in the Management of Edema, Especially Cardiac Edema. I. The Details and Basis of the Regimen, *Ann. Int. Med.* 1942, XVII, 952-969.

29. Schemm, F. R.: A High Fluid Intake in the Management of Edema, Especially Cardiac Edema. II. Clinical Observations and Data, *Ann. Int. Med.* 1944, XXI, 937-976.

30. Bridges, W. C.; Wheeler, E. O., and White, P. D.: Low Sodium Diet and Free Fluid Intake in the Treatment of Congestive Heart Failure, *New England J. Med.* 1946, CCXXXIV, 573-578.

31. Wheeler, E. O.; Bridges, W. C., and White, P. D.: Diet Low in Salt (Sodium) in Congestive Heart Failure, *J. A. M. A.* 1947, CXXXIII, 16-20.

32. Wheeler, E. O., and White, P. D.: Modern Concepts of Cardiovascular Disease, vol. XVI, October 1947.

33. Newman, A. A., and Stewart, H. J.: Experience with the Schemm Regimen in the Treatment of Congestive Heart Failure, *Ann. Int. Med.* 1948, vol. 25: 916.

34. Boas, E. P.: Coronary Artery Disease, pp. 355, The Year Book Publishers, Chicago, 1949.

35. Schroeder, Henry A.; Goldman, Melvin L., and Futcher, Palmer H.: Low Sodium Diets in Hypertension, *J. A. M. A.* 140: 458-463, June 9, 1949.

36. Schroeder, Henry A.: Renal Failure Associated with Low Extra Cellular Sodium Chloride, *J. A. M. A.* 141: 117-124, September 10, 1949.

37. Batterman, Chas.: N. Y. University School of Medicine, Dept. of Chemistry, Personal Communication, 1946.

other factor in the "low salt syndrome" is the rapid fall of the potassium level. Now that our laboratories have mastered the technique of the flame photometer, potassium determinations, together with the ECG, are our best guides. In the cases of renal insufficiency which have come under the observation of this writer, when the potassium level fell either sodium or potassium given cautiously helped the situation.

Anyone who has tried to reach a conclusion in the present concept of congestive failure is brought face to face with that old stumbling block, the kidney.

Of all the organs in the body which have been attacked by scientific procedures, I think I can safely say the kidney would head the list. Goldblatt<sup>38</sup> bluntly states that hypertension is a result of the most important disease of the kidney and the most important human organic disease. In too many instances to be recorded it has been definitely shown that cardiac edema is the result of the inability of the kidney to eliminate sodium and chloride as a normal kidney.

Merrill<sup>39</sup> claims that the edema of congestive failure depends on reduced glomerular filtration, secondary to renal vasoconstriction, presumably as a compensatory mechanism to the reduced cardiac output. Leiter<sup>40</sup> points out that this is due to "forward failure" and describes it as "cardiac renal dysfunction." Beginning with myocardial insufficiency, causing decreased cardiac output and decreased flow of the blood to the kidney, the kidney now through neurogenic stimulation causes a renal vasoconstriction, and with a decrease in flow through the glomeruli there is a low filtration, at which point we have the low salt clearance, hence, edema. This was proved in 1937 by Smith<sup>41</sup> on renal blood flow.

Leiter<sup>40</sup> brings out a most significant

point when he states that "if the kidney were not so generous in giving up a large part of its own huge blood supply, for the benefit of more vital structures, cardiac patients would not develop edema so readily when their hearts fail." One of my colleagues<sup>42</sup> is working on this very problem in an effort to keep the well supplied with an adequate flow of blood in order to compensate for the amount which it gives up.

Fundamentally, the treatment of congestive heart failure has not changed very much. Yet, too many of us in the past have followed without question the dictates of our preceptors and failed to search for the prime factor which was placing that added load on the heart and eliminate that factor if possible. Of prime importance is to take the load away from the heart and the simplest way to do this is to place the patient at rest but not necessarily absolute bed rest. In fact, as is pointed out by Levine<sup>43</sup> in a personal communication, and as we have been told by our patients, they feel better sitting out of bed, but we as a profession in the past have been pigheaded and made them stay in bed. Again, as Levine pointed out, some of these individuals do a day's work, come home and go to bed and gasp all night. And why is this? During recumbency the blood volume is increased, the circulation time is increased, and the pulmonary system is aggravated. Here is what we are doing: actually increasing the work on the right ventricle, and when the right ventricle is crowded the left ventricle cannot take it. Therefore, in writing the order for bed rest, do not forget to D/C the order and if necessary set the patient in a reclining chair. Bed rest in failure should receive the same consideration as the modern surgeon gives a surgical patient.

There is still only one drug of choice in the treatment of congestive failure and that drug is digitalis. Whether you use the tincture, the powdered whole leaf, or the glycoside, know that you are dealing with a poison and use it judiciously. Although the tincture of digitalis is not used as widely

38. Goldblatt, H.: Experimental Hypertension Induced by Renal Ischemia, The Harvey Lectures, 1939-1938, XXXIII, 237-275.

39. Merrill, A. J.: Edema and Decreased Renal Blood Flow in Patients with Chronic Congestive Failure, Evidence of "Forward Failure" as the Primary Cause of Edema, J. Clin. Investigation 1946, XXV, 389-400.

40. Leiter, Louis: Renal Diseases, Some Facts and Problems, Ann. Int. Med. 1948, vol. 28, 229.

41. Smith, H. W.: The Physiology of the Kidney, Oxford University Press, N. Y., 1937.

42. Yamauchi, Shoyei: Chief of the Surgical Staff, Kuakini Hospital, Honolulu, T. H., Increasing the Blood Supply to the Kidneys, (Personal Communication), to Be Published.

43. Levine, Samuel A.: Personal Communication and Some Harmful Effects of Recumbency in the Treatment of Heart Disease, J. A. M. A. 126: 80 (Sept. 9) 1944.

as it was in the past, it is still being used. If you use it do not use a medicine dropper; drops are not minims and patients will go into failure with "drops."

Regardless of the type of digitalis you use, know that particular type and know how it works and stick with it. Do not let the contact man from the pharmaceutical house persuade you that his product is better and cheaper. There are occasions when it is necessary to digitalize a patient as quickly as possible and ouabain is an effective drug. We, here in this country, shy away from ouabain due to its "toxicity," yet our friends in South America use it frequently. A colleague of mine in Manila has written me that ouabain is used extensively at Santa Tomas. Next in its speed of action is lanatoside C and Digoxin. Personally I have found Cedilanid and Digilanid to be safe and fast acting for routine use either intravenously or orally. There is one note of caution I would like to inject here as to ouabain: it is a dangerous drug to use for the reason patients often have been previously digitalized and one cannot determine how much digitalis they have had. Also, this drug deteriorates in the ampuls so be sure it has not been on the shelf for a long period of time.

One of the rapid methods of digitalization was developed by DeGraff and Batterman<sup>44</sup> and is a combination of an intravenous injection and oral dose; within twenty-four to forty-eight hours the patient may be placed on a maintenance dose.

When we speak of a maintenance dose, we must realize that it is purely trial and error. It is a dose which will maintain the desired effect and yet not produce toxicity. It must be remembered that a maintenance dose should not be divided—I have seen patients go into failure on divided doses. It must also be remembered that many patients who are on digitalis have to be redigitalized.

We are still in the dark as to exactly how digitalis works. We know it reduces irritability and acts on conduction tissue by vagal inhibition. We also know it makes heart muscle more efficient. How it does this is still in the field of research. It also seems to increase the tonus of the heart.

The guide to the effect of full digitalization is the slowing of the ventricular rate. Therefore we must be sure we give enough. If we use the method of DeGraff and Batterman, we must remember that each case is an individual one and where one patient may be digitalized on 1.2 milligrams of the glycoside, the next patient may require 2.0 milligrams. We must be ever watchful for signs of toxicity, such as nausea and vomiting, yellow vision, first or second degree block, and such mental symptoms as confusion, disorientation and delirium. Even if there is complete heart block and the patient is in failure you give digitalis regardless.

A most important adjunct to digitalis is the use of mercurials. In fact, in some instances, I feel they are life saving drugs. Assuming that the patient has not responded to digitalization, mercurials are indicated. Most certainly if you do not know how much digitalis a patient has had, it is safer to give a mercurial before full digitalization is started. Mercurials are best started in divided doses. It is well to bear in mind that the slower the edema is removed the better the patient will feel, especially an older individual. If there is no response to the diuretic in 24 hours, the mercurials can be repeated in some cases daily, providing the specific gravity of the urine does not go down and stay fixed. Again, many have shied away from the mercurials "due to their toxicity," and the possibility of sudden death which has been reported by several observers<sup>45, 46, 47</sup> has led many of us to use intramuscular injections rather than the intravenous route. I have had excellent results with a fairly recent mercurial Thio-merin which is given just below the subcutaneous fat.

Here we must quote Leiter:<sup>40</sup> "Why give mercurials if the edema can be controlled

45. Barker, M. H.; Lindberg, H. A., and Thomas, M. E.: Sudden Death and Mercurial Diuretics, J. A. M. A. 119: 1001 (July 25) 1942.

Brown, G.; Friedfeld, L.; Modell, W., and Sussman, R.: Deaths Immediately Following the Intravenous Administration of Mercupurin, Ibid. 119: 1004 (July 25) 1942.

46. DeGraff, A. C., and Nadler, J. E.: A Review of the Toxic Manifestations of Mercurial Diuretics in Man, Ibid. 119: 1006 (July 25) 1942.

47. Volini, I. F.; Levitt, R. O., and Martin, R.: Studies on Mercurial Diuresis; Sudden Death Following Intravenous Injection: Report of Three Cases with Electrocardiographic Studies in Two, Ibid. 128: 12 (May 5) 1945.

44. Batterman, Chas.: N. Y. University School of Medicine, Dept. of Chemistry, Personal Communication, 1946.

by salt (Na) free diet?" With deference to Leiter, there are times that the mercurials most certainly assist with the salt free diet.

Oxygen is a most important aid in combatting acute pulmonary edema, and to get the best effect of the oxygen it must be administered by mask as the usual hospital oxygen tent leaks. But we must also keep in mind that oxygen can be a very dangerous adjunct, and it must be used judiciously.

There are many times when failure is an acute emergency, with the patient drowning in his own fluids. In this situation Herrmann suggests oxygen should be administered under 4 to 6 cm. of water pressure. And as my colleague in Manila points out, ouabain is given intravenously, providing digitalis has not been used within two weeks. Another measure is the infusion of 50 cc. of 50% glucose to which 0.5 grams of aminophyllin, 0.5 grams of ascorbic acid,

and 0.2 grams of Thiomerin have been added.<sup>48</sup>

We have successfully combatted pulmonary edema by both wet and dry phlebotomy and that old stand-by morphine. When the case appears to be refractory, especially in cases of auricular fibrillation and failure, an attempt to restore a sinus rhythm by resorting to quinidine is justifiable.

In the treatment of congestive heart failure, a life may be hanging in the balance and we should therefore face the challenge with judgment and confidence. In closing I want to take this opportunity to thank Dr. Arlie R. Barnes of the Mayo Clinic and former president of the American Heart Association and Dr. Wallace M. Yater of the Yater Clinic for their kindness in reading this paper and their very valuable suggestions.

48. Herrmann, G. R.: Treatment of Circulatory Insufficiency, *Modern Medicine*, February 15, 1949.

## RECENT ADVANCES IN THE SURGERY OF OBLITERATIVE ARTERIAL DISEASES

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Prior to the past decade, surgery of occlusive peripheral arterial disease was limited almost entirely to minor amputations of gangrenous toes or major amputations at the midhigh level. Better control of spread of infection and greater understanding of neurovascular physiology and of the natural history of occlusive disease have promoted new trends in surgical therapy aimed at saving both the lives and the limbs of these patients.

The three principal lines of attack have as their goals:

A. Improvement of collateral circulation.

B. Removal of areas of segmental obstruction with establishment of unobstructed flow.

C. Conservative amputations at the transmetatarsal and midcalf level.

A. *Improvement of collateral circulation.* In recent years it has become increasingly evident to those studying peripheral arterial disease that the rate of occlusion of the main

arterial channel is tremendously important in determining whether the limb will survive or be lost. Rapidly advancing occlusion usually ends in early gangrene, whereas slowly progressive obliteration allows sufficient collateral circulation to become established so that the extremity may remain viable for years in the face of almost complete obstruction of the main channel.

At present we have no means at our disposal to slow down the occlusive processes, so our efforts are directed at speeding up the formation of collateral channels. Conservative measures have met with little success. Buerger-Allen postural exercises have been used for years to improve circulation without any experimental or clinical evidence that they do so. Systemic vasodilator drugs have had a resurgent popularity lately, but these agents produce transitory and varying degrees of generalized vasodilatation. Expansion of the entire vascular bed may actually decrease the flow of blood into a limb with increased resistance to blood flow from organic occlusion. It would seem more rational to direct our efforts toward production of localized vaso-

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dilatation of the vascular bed by sympathetic blocks with Novocain, or with surgical resection of the lumbar sympathetic ganglia. Comparative studies have shown that sympathectomy consistently produces localized vasodilation of greater degree and of much longer duration than systemic vasodilators.<sup>1, 2</sup> In peripheral vascular laboratories over the world attention has been focused on developing methods to determine how much vasospasm exists in cases with organic arterial occlusion so that the possibility of improvement from sympathectomy can be predicted accurately. Despite years of work, skin temperature studies and digital plethysmography under controlled temperature conditions have not proved reliable criteria. The reason is now becoming apparent, and it is related to the fact that experimental studies have been done immediately after sympathetic or peripheral nerve block. Clinical improvement in collateral circulation may take several months to develop maximally after surgical sympathectomy and this cannot be predicted a few minutes or hours after Novocain block. We are now returning to physical signs as more satisfactory indices of predictable success or failure. Sympathectomy improves blood flow by removing the normal vasomotor tone in collateral channels, so it stands to reason that the more collaterals there are, the more will blood flow be increased. This is borne out clinically by the reported results; greatest improvement occurs in those with the most collaterals. DeBakey<sup>3</sup> reports definite improvement in 85% of those with no gangrene; in 75% with impending gangrene, and in 35% with frank gangrene. In the latter group with frank gangrene, the salvage of extremities in 35% would still seem worth while.

Until recently it was felt that surgical sympathectomy had little to offer patients

with intermittent claudication. This was because experimental evidence,<sup>4</sup> which has since been refuted, indicated that sympathetic block increased skin blood flow but not muscle flow. Clinically also, claudication is not relieved immediately after sympathectomy. Prolonged follow-up, however, has revealed that most of these patients find a slowly progressive improvement in their symptoms, with increased walking distances, and that maximum improvement may not occur for 6 to 12 months after sympathectomy. Atlas<sup>5</sup> has obtained objective evidence that oscillometric readings gradually increase over many months in a sympathectomized leg while these readings are gradually decreasing in the unsympathectomized leg of the same individual.

It now appears that sympathectomy is valuable in the treatment of all cases of occlusive arterial disease where contraindications such as severe cardiac, renal, or cerebral disease do not exist, and is most effective in less severe forms of the disease.

*B. Removal of segmental areas of obstruction.* Although peripheral vascular arteriosclerosis is a diffuse disease, microscopically, actual anatomic obstruction is frequently segmental in nature. Areas where segmental obstruction is likely to occur are the middle of the popliteal artery, possibly from constant crossing of the knee, the superficial femoral artery where it enters the adductor canal, and the entire common iliac artery just beyond the bifurcation of the aorta.

Segmental obstruction causes a different clinical picture from diffuse arteriosclerosis.<sup>6</sup> Intermittent claudication is the primary and only complaint in these patients; they seldom if ever have rest pain, coldness or ulceration. On examination, high loss of pulses is found in the involved extremity, yet very little ischemic change is found in the distal parts. The lack of ischemia at

1. Stone, P. W., and Cooper, F. W., Jr.: Treatment of experimental acute arterial insufficiency: A comparison of the sympatholytic agent Priscoline and sympathectomy, *Surgery* 27: 572, Apr. 1, 1950.

2. DeBakey, M. E.; Burch, G.; Ray, T., and Ochsner, A.: The "borrowing-lending" hemodynamic phenomenon (hemometakinesia) and its therapeutic application in peripheral vascular disturbances, *Ann. Surg.* 126: 850, Dec. 1947.

3. DeBakey, M. E.; Creech, O., and Woodhall, J. P.: Evaluation of sympathectomy in arteriosclerotic peripheral vascular disease, *J. A. M. A.* 144: 1227, 1950.

4. Friedlander, M.; Silbert, S., and Bierman, W.: Regulation of circulation in the skin and muscles of the lower extremities, *Am. J. Med. Science* 199: 657, 1940.

5. Atlas, Lawrence N.: The growth of a collateral arterial circulation in the sympathectomized arteriosclerotic leg: An oscillometric study, *Surgery* 33: 268, Feb. 1953.

6. Julian, O. C.; deTakats, G., and Dye, W. S.: The segmental nature of peripheral arteriosclerosis—surgical application, *Angiology* 4: 12, Feb. 1953.

rest is due to the fact that the artery distal to the obstructed segment is normal in caliber and adequate collateral circulation forms to prevent skin changes. These collateral channels are not large enough to meet the demands of muscular exercise, hence, the intermittent claudication.

The diagnosis can only be confirmed by aortogram or arteriogram, outlining the entire arterial tree involved with 70% Diodrast. If the artery proximal and distal to the obstructed area is essentially normal, surgical attack on the segment is warranted. Two methods of removal of the obstruction have recently been successfully used. Through a longitudinal incision in the involved artery, it is amazingly easy to strip cleanly the sclerotic intima from the muscularis, then resuture the wall of the vessel.<sup>7</sup> This method, called thromboendarterectomy, has been successful in a moderate number of cases in reestablishing the normal channel, but thrombosis is a serious threat because of the wettable lining left in the reconstructed vessel, and this must be combatted with regional heparinization.<sup>8</sup> A superior and more dependable method consists of resection of the involved segment and establishing continuity again with a vessel graft. If technically well done, thrombosis is rare with this technic, and claudication disappears. This is a relatively new procedure, but one on which much more work is currently being done.

*C. Conservative amputations at the transmetatarsal and midcalf level.* McKittrick et al.,<sup>9</sup> in 1949, reported on a large series of 215 patients in whom transmetatarsal amputations were performed with healing of the stump in 82%. This was an extremely important contribution to vascular surgery because amputation at this level was done in this series primarily for gangrene involving one or more toes all the way to their base, whereas, ordinarily, amputation at the midhigh level would have been done.

7. Wylie, E. J.: Thromboendarterectomy for arteriosclerotic thrombosis of major arteries, *Surgery* 32: 275, Aug. 1952.

8. Freeman, N. E., and Gilfillin, R. S.: Regional heparinization after thromboendarterectomy in the treatment of obliterative arterial disease, *Surgery* 31: 115, Jan. 1952.

9. McKittrick, L. S.; McKittrick, J. B., and Risley, T. S.: Transmetatarsal amputation for infection or gangrene in patients with diabetes mellitus, *Ann. Surg.* 130: 826, Oct. 1949.

The indications for this operation are as follows:

1. Gangrene of all or part of one or more toes, providing the gangrene and accompanying infection have stabilized, and the gangrene has not involved the dorsal or plantar aspect of the foot.

2. A stabilized infection or open wound involving the distal portion of the foot, when total excision of the infected area with primary or delayed closure can be accomplished.

3. An open, infected lesion in a neurogenic foot when the entire area of anesthesia can be excised.

It is tremendously important to emphasize two very significant aspects of this problem which determine success or failure. The first is careful preparation of the extremity with complete bed rest, drainage of any closed infection, and, most important, allowing two or three weeks for stabilization of gangrene before the amputation is attempted. The second factor is gentle and meticulous technic in handling of tissues at the time of amputation.

The prognosis for healing is obviously dependent on the degree of arterial deficiency. In its evaluation, well-tried clinical methods have served better than laboratory tests. The three cardinal signs of advanced arterial impairment (no pulses below the femoral, maximal ischemic rubor on dependency, and rest pain which does not respond to therapy) indicate a poor but not hopeless prognosis.<sup>10</sup>

Once healed, these patients can walk without a limp, and need no other prosthesis than a piece of cotton in the toe of the shoe. There are no ischemic toes remaining to initiate progressive gangrene or infection. The big question, of course, is whether progressive arterial obliteration does not eventually lead to gangrene requiring higher amputation. McKittrick<sup>9</sup> found that only 4% of those who healed primarily had to have late higher amputations, and these were necessary after an average of 18 months.

Where gangrene involves the dorsal or plantar surface of the foot or the heel, it has

10. Warren, R.; Crawford, E. S.; Hardy, I. B., and McKittrick, J. B.: The transmetatarsal amputation in arterial deficiency of the lower extremity, *Surgery* 31: 132, Jan. 1952.

been customary to amputate above the knee, fearing poor healing in the midcalf region. Here again recent experiences indicate that more optimism may be felt for below the knee amputations. Dr. Robert Linton and I<sup>11</sup> followed all the lower leg amputations done at the Massachusetts General Hospital over a five-year period, and were surprised to find that they healed successfully in 81% of patients, and that all who healed were able to learn to walk without difficulty on a lower leg prosthesis. This excellent degree of rehabilitation is important when compared with the general experience after thigh amputations, when only one half of the men and a much smaller number of women ever learn to use a prosthesis. It was felt from our experience with this group of patients that intermittent

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11. Edwards, W. S., and Linton, R. R.: Closed lower leg amputations in arterial insufficiency, *Surgery* 34: 688, Oct. 1953.

claudication and absence of a palpable popliteal pulse were not contraindications to amputation at this level, but that a weak femoral pulse, or poor skin and muscle bleeding at operation indicated a poor prognosis. These patients also showed a very low incidence of later gangrene of the stump from progressive arterial obliteration. It certainly seems practical, from the standpoint of nursing care and the patient's sense of independence, to make every effort to be as conservative as possible in the level of amputation in order to secure complete rehabilitation.

#### SUMMARY

Three recent trends in treatment of occlusive peripheral arteriosclerosis have been discussed. These include methods for improving collateral circulation, for resection of segmental areas of obstruction, and for carrying out more conservative amputations.

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### CARDIAC ARREST DURING SURGERY

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and

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Cardiac arrest, as either standstill or ventricular fibrillation, may be defined as asystole for longer than a few seconds. It occurs unexpectedly and with alarming suddenness, prior to operation, during a surgical procedure, as well as after the patient is returned to the ward. Fortunately, this catastrophe is infrequent in any one surgeon's experience, although we realize that it is an ominously ever-present threat to a patient's life, and presents an emergency of the utmost magnitude to every physician who deals with anesthetized patients.

Added interest in the condition within the last three years is manifest by the increasing number of papers appearing, with longer series of cases being reported, recovery rates varying between 33 and 80 per cent.<sup>1</sup> The recovery rate perhaps depends more on the promptness with which adequate treat-

ment is instituted than any other factor. Stressing that brief time is available for treatment if death is to be prevented comprises the essence of this presentation. We review the subject to emphasize that both surgeon and anesthetist agree that absence of a carotid pulse alone is justification for a diagnosis of cardiac arrest, and that immediate cardiac massage is mandatory for recovery. Cardiac massage is resuscitative in 85 per cent of cases when undertaken in 5 minutes; if the interval is between 5 and 15 minutes, the recovery rate falls to 33 per cent. The following resume cites a case in point:

M. C. Case No. 36980. A 58 year old female had a left colectomy with end-to-end anastomosis performed at the Decatur General Hospital on 5-29-53. Upon completion of the operation after 81 minutes of nitrous oxide, oxygen, and Pentothal Sodium anesthesia, the patient was moved to a stretcher for conveyance to the ward. At this point,

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1. Gordon, Murray: Cardiac Standstill, *Surg., Gynec. & Obst.* 96: 501, April 1953.

apnea and an absent carotid and peripheral pulse were reported by the anesthetist. The exact time arrest occurred cannot thus be fixed and valuable seconds in instituting treatment were lost. The chest was quickly opened through the 4th left intercostal interspace while the anesthetist reinserted an endotracheal tube. The pericardium was opened and rhythmic massage, 60 per minute, was begun. The blood transfusion was allowed to flow more freely. After 2 minutes normal contractions ensued and the pericardium was closed. Peripheral blood pressure 100/60 was recorded. Asystole recurred and fibrillation was visible through the closed pericardium. The pericardium was reopened and massage continued and electric shocks were applied which induced repeatedly a few systoles and then fibrillation recurred as revealed by constant EKG tracings. Four cc. of calcium chloride injected in the ventricle were of no benefit. For 3 hours alternate fibrillatory twitchings and occasional systole rewarded the team working in relays. Patechial hemorrhage and ecchymoses of the epicardium made their appearance incident to trauma of the hand. Repeated electric shocks and epinephrine 0.5 cc. in the auricle did not change the situation. Death ensued. Autopsy disclosed no primary coronary or myocardial damage.

#### INCIDENCE

This discussion concerns itself with primary cardiac arrest occurring in surgical and/or anesthetized patients and not with prolonged shock, toxemia, poisonings, coronary heart disease, etc. The incidence, generally, has been found to be about one to two cases in every 2,000 operations.<sup>2, 3</sup> It is noted, however, that a different incidence appertains to intrathoracic procedures, particularly in cardiac surgery. Cooley,<sup>4</sup> reporting upon Blalock's series, found an occurrence of 5.5 per cent or 1 arrest in 16 cardiac operations. In other words, the condition arises 156 times more frequently in cardiac than in general surgery. Practically speaking, arrest has been reported in all the common operations, with the frequency reported above. Cases have resulted from

endoscopy and pericardiocentesis (personal experience), dental,<sup>5</sup> orthopedic,<sup>6</sup> obstetric,<sup>7</sup> urologic,<sup>8</sup> neurosurgical,<sup>6</sup> abdominal,<sup>9</sup> and tonsillectomy under local anesthesia.<sup>9</sup> The catastrophe has occurred in a preoperative case as well as after the patient was returned to the ward.<sup>10</sup> It is interesting to note that one survey disclosed that arrest has occurred four times more often in the last five years than in the previous 15-year period.<sup>11</sup>

#### ETIOLOGY

There exists, at the present time, general agreement<sup>2</sup> that anoxia (or more accurately, hypoxia) and/or vago-vagal reflex stimulation are probably responsible for stoppage of the heart in the majority of cases. From the experimental work of Young, Sealy, Harris and Botwin,<sup>12</sup> Sands,<sup>13</sup> Sloan,<sup>14</sup> and others,<sup>15</sup> it is evident that low oxygenation, increased carbon dioxide accumulation, and a combination of the two, are important in predisposing to cardiac arrest. Many causes of anoxia are clinically obvious. Excessive sedation, deep anesthesia, blocked airway, and rapid induction of anesthesia are commonly seen by everyone. Now, it is further observed experimentally<sup>14, 16</sup> that efforts to produce asystole of

5. Barclay, S.: Resuscitation by Cardiac Massage, *New England J. Med.* 45: 446, 1946.

6. Nicholson, I. C.: Cardiac Massage, *Brit. M. J.* 1: 385, 1942.

7. Stage, J. T.: Cardiac Arrest Under Anesthesia, *South. M. J.* 42: 597, 1946.

8. Vernon, H. K.: Recovery from Heart Failure After Cardiac Massage, *Lancet* 1: 6, 1943.

9. Gamble, H.: Discussion of 7.

10. Dale, W. H.: Cardiac Arrest, *Surg.* 135: 376, 1952.

11. Snyder, W. H.; Snyder, Monica H., and Chaffin, Lawrence: Cardiac Arrest in Infants and Children, *Arch. Surg.* 66: 714, 1953.

12. Young, W. J., Jr.; Sealy, W. C.; Harris, J. S., and Botwin, A.: The Effects of Hypercapnia and Hypoxia on the Response of the Heart to Vagal Stimulation, *Surg., Gynec. & Obst.* 93: 51, 1951.

13. Sands, J., and DeGraff, A. C.: The Effects of Progressive Anoxia on Heart and Circulation, *Am. J. Physiol.* 74: 416, 1925.

14. Sloan, H. E.: The Vagus Nerve in Cardiac Arrest, *Surg., Gynec. & Obst.* 91: 257, 1950.

15. (a) Beecher, H. K., and Murphy, A. J.: Acidosis During Thoracic Surgery, *J. Thoracic Surg.* 19: 50, 1950.

(b) Kergin, F. G.; Bean, D. M., and Paul, W.: Anoxia During Intrathoracic Operations, *ibid.* 17: 709, 1948.

16. Brodie, T. G., and Russell, A. E.: On Reflex Cardiac Inhibition, *J. Physiol.* 26: 92, 1900.

2. Glenn, Frank: Cardiac Arrest During Surgery, *Ann. Surg.* 137: 920, June 1953.

3. Cole, Warren: In discussion of 11.

4. Cooley, D. A.: Cardiac Resuscitation During Operations for Pulmonic Stenosis, *Ann. Surg.* 132: 930, 1950.

long duration by vagal stimulation are only partially successful, whereas greater results were obtained when respiratory embarrassment produced anoxia. Clinically, Shumacker and Hampton<sup>17</sup> report five cases of arrest during endotracheal extubation and suction. These probably represented a combination of reflex and hypoxia.

#### PATHOLOGIC PHYSIOLOGY

When asystole occurs from whatever cause the primary organ to be protected is the brain as shown by recent studies of Howkin's<sup>18</sup> et al. The rapidity of positive action by the surgeon in beginning cardiac massage determines the extent of damage to the brain. Mousel et al.<sup>19</sup> have shown that unconsciousness develops after 10 seconds of asystole, that EEG waves disappear after 20 to 30 seconds, and that irreversible nervous system damage occurs if cardiac massage is not instituted within 3 to 5 minutes.<sup>20</sup>

There has been little experimental work on damage to the other vital organs. The case cited created discussion between the authors as to the amount of damage suffered by the myocardium from massage. We noted that petechial to ecchymotic hemorrhage in the epicardium occurred in the case reported. We feel that more study of this factor will be educational. Autopsy demonstrated their presence. No coronary or other myocardial damage was evident. Cerebral damage, as is seen, is the primary pathologic disorder created by anoxia due to asystole.

#### DIAGNOSIS

In our experience with cardiac stoppage, this situation has been a sudden and hair-raising discovery, usually first made known by a sensitive anesthetist who observed

apnea and an absent carotid pulse. In truth, no other diagnostic criterion was required to institute massage. Nevertheless, it may be mentioned that other diagnostic aids, if available and in place, help. Negouski<sup>21</sup> believes the electro-encephalogram tracing is more sensitive to clinical death and foretells the story while animals continue breathing and ECG continues to record a tracing. Zeigler<sup>22</sup> found ECG activity after arrest.

For purposes of emphasis, valuable time may be lost in debating, calling consultation, etc., when therapy is mandatory, when the above signs are clinically evident.

#### TREATMENT

If a patient with cardiac arrest is to survive, a preconceived plan of action must be thoroughly familiar to all operating room personnel. This entails respiratory maintenance by the anesthetist, a tray of essential instruments for the surgeon to open the chest for cardiac massage, and procurement of proper drugs by another.

Oxygen (100%) must be delivered to the lungs through an endotracheal tube, preferably at a rate of about 20 times a minute, not to exceed 15 cm. of mercury pressure. It is best to allow expiration to be longer than inspiration.

Cardiac massage is begun immediately by rhythmic hand contractions of the heart of sixty to eighty times per minute, sufficiently forceful to be recorded peripherally by the anesthetist. If the chest is open there is no delay. If not, the heart is exposed through a left 4th intercostal interspace incision. Massage is continued until rhythmic beats are restored. If the heart does not respond strongly, a solution of 9.5 cc. of 1% procaine and  $\frac{1}{2}$  cc. of epinephrine may be injected into the right auricle.<sup>23</sup>

Head down position favors increased cerebral flow, as does aortic compression by the hand in the chest.

17. Shumacker, H. B., and Hampton, L. J.: Sudden Death Occurring Immediately After Operation in Patients with Cardiac Disease, with Particular Reference to the Role of Aspiration Through the Endotracheal Tube and Extubation, *J. Thoracic Surg.* 21: 48, 1951.

18. Howkins, J.; McLaughlin, C. R., and Daniel, P.: Neuronal Damage from Temporary Cardiac Arrest, *Lancet* 1: 488-492, 1946.

19. Mousel, L. H., and Essex, H. E.: Experimental Study of the Effects of Respiratory Stimulants in Animals under Pentothal Sodium Anesthesia, *Anesthesiology* 2: 272, 1941.

20. Wiggins, S. C.; Saunders, P., and Small, G. A.: Resuscitation, *New England J. Med.* 370: 413, 1949.

21. Negouski, V. A.: Agonal States and Clinical Death, *Am. Rev. Soviet Med.* 2: 303, 304, 311, 408, 491, 1945.

22. Zeigler, R. F.: The Cardiac Mechanism During Anesthesia and Operation in Patients with Congenital Heart Disease and Cyanosis, *Bull. Johns Hopkins Hosp.* 83: 236, 1948.

23. Anderson, Ruth M.; Schoch, W. G., and Faxon, H. H.: Cardiac Arrest, *New England J. Med.* 243: 905, 1950.

If ventricular fibrillation is present or develops, normal rhythm may be restored by the passage of a series of electric shocks through the heart by electrodes applied upon the surface of the heart.

Blalock has reported 4 cases in which 2 to 4 cc. of calcium chloride, 10% solution, successfully restored heart action, preferring the left ventricle for the site of injection.<sup>10</sup>

Rene Wegria and associates,<sup>24</sup> in experimental work on dogs in whom fibrillation had been induced, concluded that electroshock alone was sufficient to produce competent ventricular contractions only if applied within 30 seconds of the initiation of the arrhythmia. After 1 or 2 minutes, massage was needed before electro-shock therapy was efficacious; if longer, then massage, electro-shock and epinephrine were needed to obtain complete ventricular contractions.

We feel that if the above measures are carried out zealously and continued long enough, efforts in resuscitation will be successful in a high percentage of cases.

We condemn the use of drugs of the analeptic or sympathomimetic group, such as Coramine, caffeine, Benzedrine, Neosynephrin, Metrazol, strychnine, and Paraldine. These drugs induce demand of oxygen by the brain.<sup>20</sup>

#### SUMMARY AND CONCLUSIONS

1. Cardiac arrest during surgery is briefly discussed as to incidence, etiology, pathologic physiology, diagnosis, and treatment. A case in point is cited.

2. Emphasis, from a practical point of view, is placed upon the diagnostic features of absent peripheral pulse. This should immediately point up the mandatory treatment of rapidly exposing the heart for massage.

3. Attention is directed to the harm of analeptic and sympathomimetic drugs in cardiac arrest.

24. Wegria, Rene; Frank, C. W.; Wang, Hsueh-HWA; Misrahy, George; Miller, Robert, and Kornfeld, Peter: A Study of the Usefulness and Limitations of Electrical Countershock, Cardiac Massage, Epinephrine and Procaine in Cardiac Resuscitation from Ventricular Fibrillation, *Am. Heart J.* 8: 1, 1953.

**Acute Respiratory Infections**—Should definite pneumonia be present, as evidenced by crackles in the chest, it would ordinarily be best to send the patient to a hospital where detailed work can be done. However, should the patient be only moderately ill with a temperature under 102 degrees, and should individual circumstances dictate it, a twenty-four hour trial of antibacterial treatment may be carried out in the home. If at the end of this trial period there is no improvement, then you should send the sick man to the hospital.

In the hospital, blood and sputum cultures should be taken immediately and a white count and differential done. The results of the cultures will not be known for at least many hours, so treatment must be based on the white count and smear. If the count is high and mainly neutrophils, a sulfonamide or penicillin or both are indicated. If the count is normal or low and the differential normal or with an increase in lymphocytes, then one would be inclined to try aureomycin or terramycin. It is best to avoid streptomycin without definite indications for its use because any lung infection may turn out to be tuberculosis. In such a case the streptomycin might mask the true nature of the disease and cause untold trouble for the future of the patient. As time passes, attention should be paid to the results of the cultures, and treatment should be guided by the type of organisms found and their sensitivity to the various antibacterial agents. If the patient does not do well, cultures and sensitivity tests should be repeated so as to detect changes in the bacterial agents and their response to treatment.

The accurate detection of the viral and rickettsial pneumonias requires equipment so extensive and expensive and is so time-consuming that it is in general neither practicable nor possible. Occasionally, the history of contact with birds or the skinning of cattle will give you a clue to possible psittacosis or Q-fever. Otherwise one can only judge from the clinical picture and the white count and act accordingly.

One thing should be said. Let us assume you have a patient with definite pneumonia. He either has crackles in his chest or a positive chest x-ray film or both. You give him treatment and he promptly gets well. This goes on either at home or in the hospital. Don't forget to have a chest film taken at the time that he is apparently well to make sure that his lungs are completely clear in addition to his apparent clinical recovery. If you do not do this, you will miss an occasional case of tuberculosis and an occasional case of cancer. Always follow a patient with lung disease with the x-ray film until it is clear.—Parnell, *J. Louisiana State M. Soc.*, Oct. '53.

1954 MEETING  
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APRIL 15-17

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EFFECTIVENESS OF POLIO VACCINE TO  
BE TESTED

Plans are now being made by the National Foundation for Infantile Paralysis for large scale testing of a polio vaccine to determine how effective it is in protecting against the disease under natural conditions of exposure.

Basil O'Connor, the head of the Foundation, made his statement following the report on polio vaccine studies presented by Dr. Jonas E. Salk of the University of Pittsburgh at the annual meeting in October in Miami of the American Academy of Pediatrics. The Pittsburgh scientist's investigations are being supported with March of Dimes funds.

"I know the American people, whose support over the years has made all of this possible, are as gratified as we are with the promising progress in the fight against polio," Mr. O'Connor said. "And on the basis of Dr. Salk's recent findings, as well as on the studies of other scientists, the National Foundation is now formulating definitive plans for an evaluation of the effectiveness of a polio vaccine."

As soon as plans are complete, Mr. O'Connor indicated, the details of the vaccine validity study will be made known. It is hoped, he said, that the study can get underway in the early part of next year. In general, such a validity test would entail the vaccination of hundreds of thousands of children during a non-epidemic period and then observing what protection resulted when outbreaks of polio next visited their communities, he explained.

Mr. O'Connor pointed out that since 1949 remarkable progress had taken place in polio research. That year witnessed the removal of a major obstacle which was blocking the efforts of scientists in developing a means of preventing polio. Another scientist supported by the National Foundation—Dr. John F. Enders of Harvard and the Children's Hospital in Boston—accomplished this with the discovery of a method for growing polio virus in test-tube cultures of non-nervous tissue, Mr. O'Connor explained.

In less than two years this was followed by another achievement—the identification of three types of polio virus capable of causing the human disease. That knowledge resulted from the cooperative efforts of teams

of scientists from the universities of Southern California, Utah, Kansas and Pittsburgh. These two major discoveries—both of which were made possible by the American public's support—are fundamentally responsible for the recent rapid advances in the fight against infantile paralysis, Mr. O'Connor said.

A release of the American Academy of Pediatrics from the Miami meeting referred to above carries this subject further. Said the release:

Further progress in the development of a practical polio vaccine was reported (to the Academy) by Dr. Jonas E. Salk, research professor of bacteriology at the University of Pittsburgh School of Medicine.

In an interim report made to hundreds of the nation's child specialists gathered for the 22nd annual meeting of the American Academy of Pediatrics, Dr. Salk disclosed that on the basis of present findings "there may be several possible methods of producing a safe and effective vaccine against polio."

The Pittsburgh scientist, whose studies are being supported with March of Dimes funds from the National Foundation for Infantile Paralysis, revealed that an additional 474 children and adults have been vaccinated with several experimental vaccines. The vaccines used have proved to be completely safe and capable of stimulating the production of polio antibodies.

The new group, ranging in age from three years to over 21, are from Allegheny County, Pennsylvania. Most of them reside in Sewickly and Leetsdale—suburbs of Pittsburgh. This brings the total to 637 subjects who have participated in the study.

Although the several experimental vaccines being used vary in the manner of production or administration, they all are prepared from polio virus of all three types grown in cultures of monkey kidney tissues, and chemically-killed with formaldehyde to render them safe.

Some were "aqueous" vaccines—chemically-killed virus contained in a watery solution; others were "emulsified" vaccines—similar to the former but mixed with mineral oil. Some were administered as single "shots"; others in series of two or three doses at weekly or longer intervals. There was even variation in how the vaccine was injected—some between the layers of the skin and others into the muscles.

The vaccines used in the study stimulated the production of antibodies within a few weeks after vaccination, Dr. Salk said. Most of those in the new group have been under observation for three to four months and the trends thus far suggest persistence. In a small group of the earlier series, under observation for about seven months, there has been little or no decline. Dr. Salk explained that observations have not continued long enough to make conclusive statements on persistence of antibodies.

The report made clear that although the vaccine studies now include more than 600 persons, results of blood tests on only a portion of the group are available. The examination of multiple blood samples from all subjects to determine prevaccination and postvaccination levels of antibodies to each of the three polio virus types is exceedingly time consuming. The study is dynamic, Dr. Salk said, with improvements constantly being made in potency of virus, safety tests and inactivation methods of the vaccines.

In the group under investigation, the report showed that 60% of the children between the ages of three and eight years had no polio antibodies before vaccination. More than 30% of them had antibody for one type; considerably less than 10% had antibody for two types. Only an occasional child had antibody for all three types. With increasing age, a higher proportion of persons had antibody for one or more types, but even in the older age groups a significant proportion lack protective antibodies to one or more polio viruses.

Dr. Salk discussed the completeness of evidence as to the safety of the experimental vaccines being used in the study. Rigorous laboratory tests, including tests in tissue culture as well as inoculation of monkeys, provide assurance that the virus in the vaccine has been killed by the formaldehyde treatment. In addition, the vaccines have been administered to animals and humans who had antibody in their blood before vaccination. In all instances, vaccination resulted in a tremendous increase in antibody. If the vaccine contained living virus, he said, the antibody previously present in the blood would have neutralized the injected virus and there would not have followed the tremendous increase in antibody.

When one subject whose blood sample showed that antibody to one of the polio viruses was present—presumably as a result of an unknown polio experience in the

past—received one injection of an experimental polio vaccine, within a few weeks the blood contained exceptionally high levels of antibody of that particular type and significant but lesser amounts of the other two antibodies.

In a small group of individuals whose bloods showed no polio antibodies at all, one injection of an experimental vaccine produced little or no detectable antibody. However, when a second injection of vaccine was given several weeks after the first, there occurred a demonstrable increase in the level of antibodies.

This, Dr. Salk referred to as the “booster” phenomenon—a well recognized principle in immunology applicable to many diseases—in which the first injection of a vaccine acts as an “alert” preparing the body by a small, trial-run of antibody, and the second injection actually “ringing the alarm,” thus setting the body into full-scale antibody production.

Proof of the operation of the booster principle in polio, as well as other evidence from this and other studies, make it clear, Dr. Salk said, that “poliomyelitis viruses abide by the well established laws of immunology.” The data indicate, he went on, that although it may be easier to induce antibody formation in persons who already have antibody to at least one polio virus type, even those who have no previous antibody can form these protective substances with the proper vaccine stimulation.

Dr. Salk emphasized that these are continuing studies and that there are still many unanswered questions before it can be said that a practical vaccine has been developed.

“The studies are progressing satisfactorily; there have been no set-backs nor anything but revelations that shed more light on the course ahead,” Dr. Salk concluded.

He revealed that present studies will continue on an expanded scale in the same local area, with reports being made as more data become available.

In discussing the possibilities of a future mass trial of a polio vaccine to determine how effective it may be in protecting against the naturally occurring disease, Dr. Salk pointed out that there is a choice of methods.

One would be, he said, a controlled study involving the injection of alternate children with either a polio vaccine or another biological preparation such as a vaccine for an-

other disease or even an innocuous salt solution. This method would permit a comparison of two strictly comparable groups.

Another possibility offered by Dr. Salk would be to inject a polio vaccine into children of a narrowly restricted age group—preferably the one in which the highest incidence of the disease usually occurs. The effectiveness of the vaccine would be determined by comparing the incidence of paralytic polio in the vaccinated children with the incidence in younger or older brothers and sisters, other children in the same school or community, children of the same age in other communities, and the polio experience in previous years of children in the same age group as the vaccinated ones.

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#### NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

The seventeenth annual meeting of the New Orleans Graduate Medical Assembly will be held March 8-11, with headquarters at the Municipal Auditorium.

Eighteen outstanding guest speakers will participate and their presentations will be of interest to both specialists and general practitioners. The program will include fifty-four informative discussions on many topics of current medical interest, in addition to clinicopathologic conferences, symposia, three dimensional surgical motion pictures, round-table luncheons and technical exhibits.

The Assembly has planned another interesting postclinical tour to follow the 1954 meeting in New Orleans. On Sunday, March 14, the group will leave Los Angeles via Pan American World Airways and accommodations have been secured at the Royal Hawaiian Hotel in Honolulu, Island of Oahu.

After an interesting sightseeing schedule, the group will leave on Wednesday, March 17, for the Island of Kauai, where reservations have been made at the Kauai Inn. Visits will also be made to Hilo and the Kona Coast. The party will return to Honolulu for several days prior to sailing on the S. S. Lurline on Thursday, April 1. Arrangements have been made for visits to hospitals and for various medical programs.

Details of the New Orleans meeting and the postclinical tour are available at the office of the Assembly, Room 103, 1430 Tulane Avenue, New Orleans 12, Louisiana.

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## THE ASSOCIATION FORUM

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

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### YOU'RE NOT ALONE

W. A. Dozier, Jr.

Director of Public Relations

Several years ago the medical profession made an all out fight to stay free of governmental medicine which, of course, would have meant governmental control. Basically, it is from this control feature that most of the ills would emerge and grow. To a certain extent the profession's stand was accepted by the public, and it was possible to stave off control for the time being.

It would seem that the frontal attack made by proponents of compulsory health insurance showed poor judgment on their part. What would seem to be a more logical approach is the one which the federal government has used, successfully it might be added, to control gradually and indirectly many forms of business in this country. That approach is simply for the government to go into business in competition with private enterprise.

Practically everyone can name a few examples where government and business are competing, but the extent of this phase of governmental activity is seldom realized by most people. Practically any medical man can give you examples of how the government controls to some extent his private practice, indirectly of course, by being in competition with him. That same man most likely does not realize how many other people or businesses feel the same governmental tentacles as he. Take a look at the following.

The House Committee on Government Operations lists the following, all of which are activities in which the government competes with private enterprise:

Airways, transportation (all kinds), amusements, architecture, artificial limbs, bakeries, banking, barber shops, binding, brickmaking, broadcasting, brushes and brooms, coinage, commissaries, cordage, creameries, cafes and restaurants, canning, post exchanges, canvas goods, cattle raising, cement, chemicals, chandlery (candles), charts and maps, coal business, fertilizers, chicken raising, civil engineering, cleaning

and pressing, clothing, coffee importation and roasting, collection agencies, commercial testing, cotton industry, dairying, dredging, electric light and power, employment bureaus, explosives, animal and fowl feeds.

Ammunition, engraving, flags, foundries, fruit and vegetable shippers, furniture, furs, gold refining, golf courses, greenhouses, harness, helium, highways and roads, hospital supplies, hospitals, hotels, ice, ice cream, ink, insurance, irrigation, laundries, libraries, lithographing, loan associations, lumber, magazines and newspapers, mechanical shops, markets, mail bags, gasoline and oils, meat markets, medical science, motion pictures, motor cars, paints, parachutes.

Parcel post, printing (all kinds), radio, real estate, rubber stamps, seeds, serum, service stations, shipbuilding and repair, shoe factories, silver refining, slaughtering, stevedoring, swimming pools, tailoring, telegraph and telephone, tennis courts, truck farming, warehousing, woodworking, rubber.

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### CANCER SEMINAR

January 27 and 28, 1954 are the dates for the Cancer Seminar to be held at the Tutwiler Hotel, Birmingham, under the sponsorship of the American Cancer Society, Southern Division, the State Medical Association, the Medical College of Alabama, the Seventh District Dental Society (Jefferson County), and the Jefferson County Medical Society. The program, to be published in the December Journal, will include some of America's most distinguished men in the cancer field, and bids fair to assemble many members of the profession from Alabama and adjoining states.

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The family physician is still the greatest source of new cases (of tuberculosis); next comes the contact group. The routine examination of admission to general hospitals is proving a valuable source of case-finding. Not only is it a more productive source than the mass surveys of whole communities, but it is of particular value to the medical profession, which is already the most important source of new cases.—G. J. Wherrett, M. D., *Canadian J. Pub. Health*, May 1953.

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## STATE DEPARTMENT OF HEALTH

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### BUREAU OF ADMINISTRATION

D. G. Gill, M. D.  
State Health Officer

### THE WAR AGAINST POLIOMYELITIS

Contributed by

John M. Gibson, B. Litt., Director  
Division of Public Health Education

Alabamians have been greatly concerned over poliomyelitis in the past several months. Although the incidence of the disease was about normal everywhere in the state except Montgomery County, there was the constant, nagging fear that epidemic or near-epidemic conditions would blaze up in other areas. This anxiety Alabama has shared with several other states.

It is well to take a look occasionally at the long-time poliomyelitis picture. There is a great temptation to concentrate our thinking and our fears upon the latest experience with the disease. And it is a human tendency to become much less concerned over a long-time danger as soon as its acute phase has disappeared. We, for example, get all stirred up over traffic accidents and want to do something drastic about them just after several deaths of this kind have occurred. But our interest tends to lag after a while, unless it is kept alert by other deaths of this kind. Political corruption stirs a wave of indignation and gives rise to reform movements when it becomes especially flagrant. But the political racketeers have learned that it is usually safe to "sit tight" and bide their time. Either the reform wave dies out before it brings about the unseating of corrupt officials or the reform office-holders suffer defeat before long as a result of the loss of aggressiveness on the part of their erstwhile supporters. So, in working for clean government, for traffic safety, for the mastery of a grave disease like poliomyelitis and for other highly desirable things, it is necessary to concentrate upon the long pull. Important as a single epidemic or series of epidemics may be, they should not be allowed to obscure the broad picture.

The picture, as far as poliomyelitis is concerned, is indeed broad. There is good rea-

son to think this disease existed, unrecognized, thousands of years ago. It has been an important factor in public health for several decades. It will probably be a source of anxiety to parents, the public health agencies and the medical profession for some time to come. Nevertheless, authorities in this field are cautiously predicting that its effective curbing seems to be now in sight.

For that of course we are largely indebted to hard-working men and women toiling away in laboratories. The first great forward steps in rendering poliomyelitis relatively impotent have been taken by devoted researchers. It is they who will find and test the agency which will prove the disease's undoing. Then, after their task has been completed and those men and women in white turn to other jobs, the public health agencies and the doctors will make the fruits of their labors available to the boys and girls of Alabama and the rest of the world.

Impatient as most of us are to see the complete mastery of poliomyelitis, we sometimes fail to understand how much progress in that direction has already been made. That progress has been characterized as "very considerable" by a person who is probably as well qualified as anyone to express an opinion on the matter. For he is Dr. Henry M. Weaver, director of research for the National Foundation for Infantile Paralysis. There certainly are many others who will agree with him in that view, including some of the country's leading medical authorities.

Dr. Weaver gave an informal review of poliomyelitis progress at a meeting of the Foundation's Board of Trustees several months ago in New York City. A condensed version of it has been published in *Public Health Reports*, an official publication of the U. S. Public Health Service.

As he points out, early researchers in the poliomyelitis field performed an unintended disservice to poliomyelitis research by making some supposed discoveries which were found to be incorrect. That is not unusual in work of this kind. Poliomyelitis is

certainly not the only disease about which some untrue and unsound theories have been formed, however unintentionally. False steps of that kind are a part of medical progress. In that field, as in others, we learn valuable lessons from our mistakes. Nevertheless, as Dr. Weaver tells us: "It is not too unfair to say that, for the most part, knowledge about poliomyelitis in 1938 was so limited in extent, and so lacking in experimental proof, that it was difficult for the investigator of that day to distinguish between fiction, wishful thinking, and fact."

Why was that true? Dr. Weaver has an answer to this question:

"In 1938, the science of virology was in its swaddling clothes. Only a handful of workers were qualified by training and experience to conduct critical investigations in this field. The tools required to carry out scientific research on poliomyelitis were, for the most part, crude prototypes of those available today; and even they were in such short supply, and so expensive, that it was a fortunate worker indeed who had an opportunity to work with them. Furthermore, most work on poliomyelitis required use of monkeys, with the result that research was even further limited to those very few individuals who could obtain financial support in large amounts. In an attempt to continue work without adequate means of support, it appeared necessary to carry out with one or two monkeys experiments that should never have been attempted without utilizing scores of these animals. The result was a long period of confusion with respect to the immunology and other aspects of poliomyelitis."

It required patient research and firmly opened minds to reach the conclusion that some of those early theories regarding poliomyelitis were unsound and should be abandoned. One which kept the researchers on the wrong track for a pretty long time was that a single type of virus caused all cases of this disease. (We now know that there are three.) Another false bit of information which delayed the beginning of work in the right direction was that only nerve cells provided a suitable breeding place where the virus could reproduce itself. (We have found that there are a number of other places where reproduction can take place.) Still another theory which appeared sound fifteen years ago but has been exposed as false is that the nose was the chief, if not the only, avenue of entry for the virus and that it journeyed to other parts of the body only within nerve fibers. (We now know that the poliomyelitis virus can enter the body through other openings, as well as the nose.)

In the early 1940's, when the country's attention was concentrated mainly on the Second World War, a group of medical scientists were fighting this other war—the war of the poliomyelitis virus—as energetically as soldiers, sailors and airmen were fighting Germans and Japanese. They studied the various changes that occurred in the human body after an invasion by that virus. They found out that individual patients' reactions to that invasion varied widely: Some, they learned, suffered no effects more serious than slight fever which soon passed. Others became helplessly paralyzed. And some died. Moreover, they found out that many, many people developed poliomyelitis without having any symptoms whatsoever. Many indeed never knew they had ever had the disease.

Those were just a few of the discoveries that were made in those wartime 1940's—sound discoveries this time which advanced the war against poliomyelitis substantially. It was revealed also that the digestive tract constituted, in Dr. Weaver's words, "both the portal of entry and the portal of exit of the virus." Another additional bit of knowledge gleaned from that laborious study was that the chief reservoir of the poliomyelitis virus was human beings—not any of the lower animals. Still another knowledge nugget found during that period was that flies play a part in the dissemination of the poliomyelitis virus, and, therefore, in the prevalence of the disease. However, a bit of at least partially contradictory knowledge gained about the same time tended to confuse the picture somewhat: Fly-destruction campaigns did not seem to have any appreciable effect upon polio prevalence in a community. Indeed it was found that poliomyelitis seemed less prevalent in those backward areas where modern sanitation was unknown than in sections enjoying the latest equipment for the safe and sanitary removal of body wastes.

The gain in knowledge regarding the nature of the disease which has been described was accompanied by gains in protecting poliomyelitis patients from its most dreaded effects. Unfortunately, the power to limit the spread of paralysis is itself definitely limited, even now, as you know from Alabama's latest large-scale experience with the disease. But a measure of control of that paralyzing spread is now in the hands of your doctor and the clinics specializing in

the care of this type of illness. Limited as they are, they are so effective that, as Dr. Weaver points out, "if correctly employed and instituted early enough, they are most effective in preventing contractures of muscles." (It is muscle contracture of course that brings on the crippling which gives poliomyelitis its terror.) The gains recently made also include new treatment methods which make it possible for the poliomyelitis patient to obtain the maximum degree of use from those muscles which have been affected by the virus. And the recovery chances of victims of bulbar poliomyelitis—that affecting the breathing apparatus—have improved markedly.

The accumulation of poliomyelitis knowledge has been accentuated in more recent years. Perhaps the most valuable gain of this kind has been the correction, by the strictest means, of the old idea that poliomyelitis was caused by only a single virus strain, or type. Experts toiled at this task for three years, not haphazardly or intermittently, but unbrokenly and unceasingly. The cost of this epochal scientific victory has been high: Dr. Weaver estimates it at about \$1,370,000. But the truth gleaned in that way was, and is, worth vastly more than that to humanity. For the knowledge that there are three different types of poliomyelitis virus has advanced the conquest of this disease vastly. Almost approaching it in value is the knowledge—sad knowledge but with tremendous potentialities—that immunity to one type of virus provides no immunity to the other two. Truly does Dr. Weaver call this twin discovery "one of the most important milestones in research against poliomyelitis."

Still another major gain in the battle against poliomyelitis in the laboratory has been the knowledge that the blood of most adults contain protective antibodies. This knowledge made possible the use of immune serum globulin, better known as gamma globulin, to reduce the number of poliomyelitis victims and particularly to protect youngsters against the paralyzing effects of the disease. Alabamians have good reason to know about the use of this product, made from human blood. For its recent large-scale use in this state made headlines all over the country.

However, the medical profession and public health agencies readily agree with Dr. Weaver that "immune serum globulin is not

a practical answer for poliomyelitis." It is certainly a great help. But something more permanent and more certain of good results is certainly needed. Medical scientists are looking for it. What they seek is a poliomyelitis vaccine. Successful results have been obtained in laboratory tests upon animals. It still remains to be seen whether equal success would be met with in the large-scale vaccination of humans. Still, there is good reason to believe that, sooner or later, safe, permanent protection of this kind will be at hand. When that will be, no one can tell.

Let us hear what Dr. Weaver has to say about that:

"It would seem that we are now in possession of the scientific principles and tools required. But, although hope in the hearts of men will undoubtedly continue to spring eternal, and such hope with respect to poliomyelitis is not without some very considerable basis in fact, no one can safely predict when that longed-for day will come. The only truthful answer is this: A practical method for control of paralytic poliomyelitis will never be forthcoming unless research is continued."

The people of Alabama and the rest of the world dread poliomyelitis far too much to allow the fight against it to lag. Research in this fruitful field will certainly continue until final victory is assured.

## BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director

### SPECIMENS EXAMINED

August 1953

Examinations for diphtheria bacilli and Vincent's .....	279
Agglutination tests .....	1,336
Typhoid cultures (blood, feces, urine and other) .....	925
Brucella cultures .....	20
Examinations for malaria .....	220
Examinations for intestinal parasites .....	4,009
Serologic tests for syphilis (blood and spinal fluid) .....	24,782
Darkfield examinations .....	5
Examinations for gonococci .....	1,596
Examinations for tubercle bacilli .....	3,055
Examinations for meningococci .....	0
Water examinations .....	2,106
Examinations for Negri bodies .....	111
Milk and dairy products examinations .....	4,962
Miscellaneous .....	869

Total 44,275

BUREAU OF PREVENTABLE DISEASES

BUREAU OF VITAL STATISTICS

W. H. Y. Smith, M. D., Director  
CURRENT MORBIDITY STATISTICS

Ralph W. Roberts, M. S., Director  
PROVISIONAL BIRTH AND DEATH STATISTICS FOR JUNE 1953, AND COMPARATIVE RATES

	July	Aug.	E. E.* Aug.
Typhoid and paratyphoid fever	2	14	13
Undulant fever	3	7	1
Meningitis	4	10	7
Scarlet fever	17	15	19
Whooping cough	17	25	60
Diphtheria	8	24	16
Tetanus	5	4	4
Tuberculosis	141	184	255
Tularemia	0	2	0
Amebic dysentery	9	1	3
Malaria	8	8	22
Influenza	9	45	23
Smallpox	0	0	0
Measles	49	29	29
Poliomyelitis	92	96	54
Encephalitis	1	0	1
Chickenpox	11	6	5
Typhus fever	9	0	27
Mumps	76	38	30
Cancer	443	562	341
Pellagra	3	2	2
Pneumonia	73	98	122
Syphilis	160	142	1040
Chancroid	4	9	11
Gonorrhea	305	414	566
Rabies—Human cases	0	0	0
Positive animal heads	56	53	0

As reported by physicians and including deaths not reported as cases.  
\*E. E.—The estimated expectancy represents the median incidence of the past nine years.

**Cancer of the Stomach**—Although a five year survival rate of only 10 per cent leaves much to be desired, it does represent a real advance over the usually reported five year survival rates of approximately five to six per cent. The present study demonstrates that as much can be accomplished by radical subtotal resection of the stomach in the treatment of gastric cancer as by total gastrectomy if one reserves the radical subtotal resection for those cases in which the lesion is limited to the distal half of the stomach. However, lesions in the proximal half of the stomach should be treated by total gastrectomy. Although the results in the present series are better than those usually reported, we are convinced that much should and can be done to improve these results. The fact that only 33 per cent of our patients had a lesion which was resectable illustrates that the diagnosis was made late in most of the cases. It is only through earlier diagnoses at a time when the lesion is still limited to the stomach when a salvage rate of over 75 per cent be obtained that material improvement in long-time survival can be secured. It is our conviction that if we continue to wait until individuals have symptoms and signs which are classical of gastric cancer, we are going to continue to get bad results in the treatment of the disease. It is only by institution of appropriate therapy at a time when the classical manifestations of gastric cancer are lacking that a significant increase in the five year salvage rate can be obtained.—Ochsner, J. M. A. Georgia, Oct. '53.

Live Births Stillbirths and Deaths by Cause	Number Registered During June 1953			Rates* (Annual Basis)		
	Total	White	Colored	1953	1952	1951
Livebirths	6474	3971	2503	24.8	22.9	25.7
Stillbirths	147	65	82	22.2	29.4	26.4
Deaths (stillbirths excluded)	2061	1249	812	7.9	9.0	8.5
Infant deaths— under one year	219	125	94	33.8	50.5	37.4
under one month	164	104	60	25.3	33.5	26.6
Cause of Death						
Tuberculosis, 001-019	43	19	24	16.5	18.7	27.2
Syphilis, 020-029	16	7	9	6.1	2.3	3.9
Typhoid and paraty- phoid, 040, 041	1	1		0.4		0.8
Dysentery, 045-048	5		5	1.9	2.7	2.0
Diphtheria, 055	1		1	0.4		
Whooping cough, 056					0.8	1.2
Meningococcal in- fections, 057	1	1		0.4	0.4	
Poliomyelitis, 080, 081	2	1	1	0.8	0.4	1.6
Encephalitis, 082, 083					0.8	0.4
Measles, 085					3.1	0.8
Malignant neoplasms, 140-205	225	156	69	86.3	98.4	81.7
Diabetes mellitus, 260	23	17	6	8.8	12.8	13.4
Pellagra, 281	1	1		0.4	0.4	0.8
Vascular lesions of central nervous system, 330-334	253	142	111	97.1	127.2	94.4
Other diseases of nervous system and organs of special sense, 340-398	19	11	8	7.3	14.8	9.1
Rheumatic fever, 400-402					2.7	2.0
Diseases of the heart, 410-434	504	344	160	193.4		
Hypertension with heart disease, 440-443	154	74	80	59.1	249.3	250.7
Diseases of the arte- ries, 450-456	28	19	9	10.7	13.6	12.6
Other diseases of cir- culatory system, 444-447, 460-468	28	15	13	10.7	12.8	7.5
Influenza, 480-483	7	3	4	2.7	5.4	4.7
Pneumonia, 490-493	51	20	31	19.6	5.1	21.3
Bronchitis, 500-502					0.4	0.8
Appendicitis, 550-553	4	3	1	1.5	1.6	2.0
Intestinal obstruction and hernia, 560, 561, 570	12	10	2	4.6	6.2	6.3
Gastro-enteritis and colitis (under 2) 571.0, 764	15	4	11	5.8	13.2	3.6
Cirrhosis of liver, 581	9	8	1	3.4	5.1	4.7
Diseases of pregnan- cy and childbirth, 640-689	9	3	6	13.6	18.2	21.0
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 682, 684	4	2	2	6.0		3.0
Congenital malforma- tions, 750-759	23	16	7	3.6	5.1	5.1
Accidental deaths, total 800-962	166	104	62	63.7	78.6	72.6
Motor vehicle acci- dents, 810-835, 960	90	62	28	34.5	38.5	24.5
All other defined causes	362	227	135	138.9	147.8	156.8
Ill-defined and un- known causes, 780- 793, 795	99	43	56	38.0	45.5	44.6

Rates: birth and death rates per 1,000 population; infant deaths—per 1,000 live births; stillbirths per 1,000 deliveries; maternal deaths per 10,000 deliveries; deaths from specified causes per 100,000 population.

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## BOOK ABSTRACTS AND REVIEWS

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**Surgical Pathology.** By Lauren V. Ackerman, M. D., Professor of Surgical Pathology and Pathology, Washington University, School of Medicine; Surgical Pathologist, Barnes Hospital and Affiliated Hospitals, St. Louis; Consultant to the Ellis Fischel State Cancer Hospital, Columbia, Mo.; Consultant to the Armed Forces Institute of Pathology. Cloth. Price, \$14.50. Pp. 836, with 903 illustrations. St. Louis: The C. V. Mosby Company, 1953.

The author of this book is particularly well qualified to write a text on the pathology of the living. He has had many years of experience in pathology and has been associated with hospitals and medical schools in one of our large medical centers. The purpose of this book is not to discuss general pathology or the pathology of the dead but this book deals with the pathology of the living and has been written for the pathologist, the surgeon, the medical student and the internist who are daily intimately concerned with these problems. The chapter on skin was written by Dr. Zola K. Cooper and the chapter on neuropathology was written by Dr. David E. Smith. Both of these were assistants to the author and have an excellent background in these topics. The text is well illustrated and there are numerous photographs of gross specimens from the common surgical diseases. There are also microscopic photographs. The usual diseases of the lungs, kidneys, thyroid, and gastro-intestinal tract are well covered but there is no attempt to include the rarer diseases. The subjects are well outlined by the history or embryology of the disease, which is followed by the physiology, the gross and microscopic description and the treatment and clinical pathological correlation. One of the outstanding features of this book is the excellent clinical pathological correlation at the conclusion of each subject. This is most helpful in answering the questions as to what should be done after the diagnosis is made on surgical specimens and it correlates the gross findings with the clinical findings. This correlation explains clearly the type and extent of operation or x-ray therapy best suited for that particular disease. The bibliography listings at the conclusion of each chapter are comprehensive, up-to-date and are readily available in most medical libraries. There has been a need for this type of surgical pathology text for some time and it is most useful for all of those who in their daily practice must answer the questions dealing with the tumors and the diseases of the living patient.

Charles R. Lafferty, M. D.

**Manic-Depressive Disease.** By John D. Campbell, M. D., Attending Psychiatrist, Georgia Baptist Hospital and St. Joseph's Infirmary, Atlanta; Chief Psychiatrist, Peachtree Sanitarium, Atlanta; Captain, MC, U. S. N. R. Cloth. Price,

\$6.75. Pp. 403. Philadelphia: J. B. Lippincott Co., 1953.

Of the psychoses, the schizophrenic reactions have received the lion's share of attention, in research as in periodicals and books. The disorders of affect, largely self-limiting and generally responsive to current therapeutic techniques, do not invite the psychiatric efforts and interest appropriate to their rather large social and morbid significance. This book is a conscientious effort to remedy this deficiency in the literature on these disorders.

There is the expected historical note, and the consideration of the cyclothymic personality. The symptomatology is approached from three points: the emotional, the autonomic, and the mental. It is in the discussion of the etiology of these disorders that the trend away from the purely psychogenic gives the book a note of currency not found elsewhere. The author advances the hierarchy of the hypothalamic-autonomic systems as the main etiologic agent. The section on treatment includes indications for E. C. T. which would not be accepted by even the more enthusiastic users of this form of therapy.

It is generally agreed that sharp delineation of psychiatric entities is not always possible, or even essential. Shading and overlapping of contiguous disorders occasionally make diagnostic distinctions quite controversial. However, there is much case material offered here that does not appear to be properly manic-depressive, even in its fringe areas.

Despite the author's industry in providing a note of freshness, the book fails to avoid the clinging mustiness of descriptive psychiatry. Certainly Kraepelin enjoys more references than any other single author listed in the index.

Philip S. Bazar, M. D.

**Fool's Haven.** By C. C. Cawley. Cloth. Price, \$2.75. Pp. 210. Boston: House of Edinboro, 1953.

This is a novel with a mission. Apparently, Mr. Cawley feels as strongly on the matter of interference, on religious grounds, with orthodox medical treatment as Harriet Beecher Stowe felt regarding human slavery. Fool's Haven is not another Uncle Tom's Cabin. But it presents its author's message as earnestly.

Being a novel, Fool's Haven tells a story. It is a story of a young college student who falls in love with a high school senior in a typical university town. As their romance advances near its natural climax, he discovers to his discomfiture that her mother is a firm believer in faith healing: She will have nothing at all to do with doctors. Carol is not so strong in that faith. But she leans strongly that way and would not do anything to hurt or oppose her mother.

At a party given for the happy couple just two or three nights before their selected wedding day, she develops appendicitis. Friends send for a doctor but she refuses to talk to him or let him do anything for her. Crushed and anxious, the prospective bridegroom takes her home, pleading with her all the while to let him call a doctor. But the members of the faith-healing cult are having a meeting in her behalf. The minister insists that prayer alone is sufficient for Carol's recovery: To call in human medical aid would be a violation of that church's fundamental principles. Carol dies. The young lover is furious.

The girl's mother and the pastor of the small church which has won the blind devotion of this middle-class family are brought to trial on a charge of being responsible for the death. The

latter is convicted of manslaughter. The former is acquitted.

This author-with-a-mission wants laws passed to prevent such things from happening. However much one may wish to protect young women like Carol Dunn from a failure to benefit from the fruits of modern medical procedures, one comes face to face with certain constitutional guarantees which stand in the way, including the right to adopt and practice any religion one wishes, no matter how objectionable and harmful its practice may be, so long as it does not interfere with the safety and rights of others or harm society generally. Nevertheless, even those who may not go as far in that direction as Mr. Cawley does will agree that he has made out a strong and interesting case.

John M. Gibson.

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## AMERICAN MEDICAL ASSOCIATION NEWS

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### HOUSEWIVES MOST PRONE TO SKIN DISEASES OF HANDS

Being "just a housewife" can be a dangerous occupation—one of the most dangerous, in fact, as far as skin disturbances of the hands are concerned.

Dermatitis of the hands gives rise to an immense amount of suffering and constitutes about nine per cent of the daily medical endeavor of a practicing dermatologist, it was stated by Dr. Richard L. Sutton, Jr., Kansas City, Mo., and Dr. Samuel Ayres, Jr., Los Angeles.

"The usual patient is a young matron, who must keep house, cook, wash dishes, do the laundry, raise her children, and hold her husband; who can ill afford to sustain the misery of manual disability and whose occupation is inherently one of the most hazardous with which the dermatologist commonly has to deal," the doctors wrote in the current *Archives of Dermatology and Syphilology*, published by the American Medical Association.

Causes of inflammatory skin conditions of the hands are numerous, and to effect a cure it may be necessary to eliminate more than one condition, according to the doctors, who added:

"The skin as a whole is the dividing line between the person and his environment. It combines the features of a barrier, an adaptive mechanism, and a sensory organ—a great deal is asked of it, so to speak.

"The skin of the hands is exposed to the potentiality of diseases provoked by heat,

cold, light, moisture, irritant chemicals, sensitizing chemicals, and pathogenic organisms to a degree over and above other skin. It is subject additionally to all the diseases of internal origin that skin is elsewhere, and the hands are especially subject, being special tactile organs, to psychosomatic disturbances."

There are many mechanisms provoking inflammatory skin disease of the hands, the doctors pointed out:

1. Injury of all kinds, including friction, heat, cold, moisture, soaking, radiation and scratching.

2. Contactant injury by such primary irritants as soap, detergents, polishes and cleansers.

3. Contactant injury by such sensitizers as nickel, rubber or plastic handles, rubber hose, and kitchen-knife handles which provoke itching, redness and the formation of blisters when the skin is even lightly touched.

4. Allergic reactions to ingested, inhaled or injected foods or chemicals.

5. Locally invasive parasites including viruses, bacteria and fungi, as well as animal parasites.

6. An infection in another part of the body.

7. Nervous, mental or psychiatric abnormalities, including anxiety, scratching and self-mutilation.

8. Cutaneous changes due to nutritional deficiencies, metabolic defects and hormonal imbalances.

9. "Lowered resistance" of the individual, rendering the skin susceptible to inflammation or infection.

10. Combinations of these mechanisms.

"Dermatitis of the hands is not often due entirely to one mechanism," the doctors stated. "It is seldom a simple thing etiologically, and, in the study of any case, the person as a whole and his environment as a physiochemical and sociobiologic complex may have to be taken into account. It is the physician's job to create the optimum circumstances which favor healing, and that is all he can do."

Necessary factors to be taken into consideration to effect a cure of skin disturbances of the hands were outlined by the doctors:

1. No physical agencies or excessive nervous mobility or scratching should interfere with healing. The patient must have rest, relaxation and quiet. Use of stimulants such as coffee, tea and the cola drinks should be severely restricted.

2. No chemical likely to irritate the skin should touch the hands. Only water, cotton, linen and carefully selected, rarely irritating medicines should be used.

3. Coccic parasites should be eliminated by means of non-irritating drugs.

4. Infections in other parts of the body should be eliminated through use of antibiotics.

5. Optimum capacity to heal should be promoted in the patient himself by adequate vitamin and protein nutrition.

6. Possibility of food allergy investigated.

7. X-ray therapy used only when absolutely needed.

Dr. Sutton is professor and chairman of the department of dermatology and syphilology, University of Kansas Medical Cen-

ter, Kansas City, Kansas. Dr. Ayres is emeritus professor of dermatology and syphilology, College of Medical Evangelists, Loma Linda, Calif., and Los Angeles.

### HANDICAPPED SEEK CHANCE TO PROVE THEMSELVES

A chance to prove themselves—a chance to prove they don't need anyone to feel sorry for them—is what most of the handicapped want.

However, the well-meaning person often robs the handicapped of this chance, Dr. John E. Eichenlaub, Urbana, Ill., wrote in the current Today's Health magazine, published by the American Medical Association.

"A person with a defect, whether it is mild or severe, is still a person," Dr. Eichenlaub pointed out. "Like anyone else, he has to feel accepted and wanted as a person before the friendship or the applause of his fellows means anything to him. To think of him first as a horrible case, second as an object for charity (whether in money, deeds or words) and last or not at all as a person closes the roads of real human contact.

"More than anyone else, a person who is handicapped needs to find these roads open. Friendship and applause themselves do not have greater meaning for him than for other people, but proof of his ability to win these treasured rewards certainly does. His constant fear is that he will not be able to live a fruitful and satisfying life.

"He can get used to the idea of not being as productive, as comfortable or even as independent as his fellows, but he can never get used to the idea of being a cripple instead of a person—of being closed off from his fellow man by an impenetrable wall of differentness."



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## GASTROSCOPY

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All physicians in practice are daily confronted by patients beset with a wide variety of digestive disturbances. Heart burn, dyspepsia, indigestion, flatulence, upper abdominal pain, tenderness and burning are among the common complaints which are presented to us. As a rule, we proceed to interpret these symptoms along well defined lines. The patient is subjected to further questioning, and a complete physical examination is made, later supplemented by appropriate laboratory procedures and selected gastrointestinal x-ray studies. I think we will all admit that, although this approach frequently defines the problem in a manner that satisfies both us and the patient, there are a large number of instances in which we are still baffled. Many of these individuals regarded as having "functional disorders" are treated symptomatically with combinations of diet, sedation, antispasmodics and antacids. Quite a number of this group achieve satisfactory results. Nevertheless, we are still plagued by a sense of inadequacy with respect to our diagnosis, particularly when our patients revisit us with persistent or recurrent complaints never fully diagnosed nor therapeutically controlled.

I wish to present the case for gastroscopy as a positive aid in certain of these instances, together with a sane concept of its obvious limitations. My conclusions will be based on experience with 250 consecutive gastroscopies performed during the last two and one-half years. The majority have been performed at the Jefferson-Hillman Hospital with assistance of members of the staff

of the Medical College of Alabama. About sixty per cent of the cases are private patients and the remainder are teaching cases of the medical school.

Gastritis is a very common explanation for patients suffering from a wide variety of vague but continuing upper abdominal pains. The stomach is a dynamic organ with an extremely reactive and changeable mucous membrane that responds strongly to various stimuli—nutritional, emotional, non-specific, stress and others. The mucous membrane covering some sixty to seventy per cent of the stomach may be seen and may be properly evaluated gastroscopically. The various syndromes of gastritis frequently respond to comprehensive therapy and extend the usefulness of medical care to a wide variety of sufferers otherwise condemned to the unenviable diagnosis of nervous indigestion and "gas." In our series we were able to identify 49 instances of hypertrophic gastritis, 23 cases of atrophic gastritis or gastric atrophy, and 13 cases in which both types of gastritis were present. A larger group of superficial gastritis cases was likewise noted.

We must understand that all modalities for diagnosis have their limitation. The x-ray method has been perfected in skilled hands to become an instrument of precision. However, I believe the most sanguine optimist among the radiologists will admit that some ten to fifteen per cent of gastric ulcers are missed. Our series has turned up four cases of patients subjected to x-ray with repeatedly negative findings only to discover them by the gastroscopic method. These four have received positive operative diagnoses. A still larger group of gastric ulcers

not found by x-ray has been identified by gastroscopy but without further corroboration.

At times gastroscopy will reenforce the conviction of the clinician with respect to the type of ulcer demonstrated by the radiologist. It is readily admitted that occasionally even when the ulcer is studied microscopically the question of malignancy is difficult. Still, we have been able to add evidence in the study of these patients that has assisted us in making a decision with regard to operative versus medical therapy. In no instance has the gastroscopic diagnosis been disproved by operative or pathologic methods.

Quite frequently the radiologist is confounded by the presence of spasm of the lower gastric segment. His confusion is then transferred to the responsible physician. The alternatives are either to take a serious cancer risk with the patient or to subject him to a possibly needless abdominal exploration with its attending risks which are frequently considerable in old or debilitated patients. In five instances gastroscopy has been of crucial aid in making the decision. In four instances it was possible to get a good enough view to establish the presence of normal antral mucous membrane and save the patient an operation. In one instance operation was decided upon and the tentatively negative gastroscopic findings confirmed.

An otherwise unexplained upper gastrointestinal hemorrhage may occasionally be cleared up by gastroscopy. In our series we have only one such case. At times gastritis will cause massive bleeding and rarely an ulcer not seen on x-ray will be of sufficient size to cause gastric hemorrhage.

There are many instances in which one is reasonably sure that the patient does not harbor a carcinoma of the stomach but in whom the suspicion lingers despite normal x-ray, gastric analysis and other laboratory values. In certain instances one is justified in seeking additional information from gastroscopy. Owing to the fact that twenty to thirty per cent of the stomach is invisible by this technique, a negative gastroscopic report is of very limited value. Occasionally, we find it useful in buttressing all other negative information.

Polyps, gastric atrophy and gastric cancer are reportedly frequent in cases of pernicious

anemia. In our five cases only one abnormal stomach was diagnosed and this was atrophic gastritis. Many observers feel that such patients should be gastroscopied yearly to anticipate these degenerative trends. Occasionally, enough B-12 or liver is given to control the hematologic and neurologic picture without being adequate to prevent gastric atrophy which may provide the background for the more serious sequelae.

The differential diagnosis of gastric deformity in an individual with active syphilis presents difficulties which may sometimes be resolved by gastroscopy. In two instances a syphilitic was saved operation for suspected carcinoma by observing the deformity to disappear under antiluetic therapy. The decision not to operate was in part based on gastroscopic findings. In two other instances gastroscopic evidence of carcinoma was quite apparent despite the positive Kahn in the suspected individuals.

The postoperative state in patients who have undergone gastric surgery is frequently far from smooth. It is frequently reassuring to establish negative findings on gastroscopy, at which time the stoma can frequently be subjected to clear view. So far no marginal ulcerations have been proved by gastroscopy. Gastritis is very frequently found after operation and several instances of jejunitis observed. In general, x-ray methods are much more satisfactory.

In radiologically proved duodenal ulcer one observes a high incidence of hypertrophic gastritis. Although the duodenum is never visualized gastroscopically, one can derive some idea of gastric function by actually inspecting the mucous membrane of the stomach. In certain patients refractory to intensive ulcer therapy the degree of concomitant hypertrophic gastritis affords insight into some of the underlying symptoms.

I have presented the positive phase of gastroscopy. I would like now to consider the numerous limitations under which the procedure labors.

Gastroscopy is relatively a very safe procedure. Hundreds of consecutive cases have been reported without a fatality. We had only one minor complication. This was a case of suspected pneumoperitoneum following the procedure which was treated non-operatively by constant suction and antibiotics and which cleared without further

incident. The greatest risk is a sensitivity reaction to Pontocaine or cocaine which is inherent in all similar procedures.

All patients who are gastroscoped are subjected to preliminary fluoroscopy of the chest, esophagus, stomach and duodenum.

a. The patency of the esophagus and the absence of aneurysm, serious thoracic or cardiovascular deformity established, a flexible Ewald stomach tube is inserted into the stomach to confirm the patency of the esophagus in any doubtful case.

b. Serious infections or ulcerating lesions of the mouth, nasopharynx or esophagus require postponement of the procedure until these are cleared up.

c. We consider the presence of penetrating or active gastro-duodenal ulcerations to make the procedure slightly hazardous. The inflation necessary for visualization might theoretically result in pneumoperitoneum.

d. No patient who is unwilling to have the procedure done should be attempted. Successful gastroscopy differs from many instrumentations since it depends on active cooperation on the part of the patient rather than mere passive acquiescence. Most accidents have been reported in disturbed or uncooperative patients and these individuals should be left strictly alone.

e. In any seriously ill person or anyone with grave cardiorespiratory disease the procedure is best omitted. One must weigh the possible value of the information to be obtained against the increased hazard. I have gastroscoped elderly hypertensive and dyspneic patients on occasions without difficulty.

The limitations of the method should be recognized by all parties concerned, including the patient. The fact that large areas of the stomach frequently the site of serious disease are not always accessible detracts markedly from its worth. The fact that one cannot see into the duodenum deserves emphasis. The lack of authority inherent in a negative report deflates the value of the instrument in screening this ever more cancer-conscious public, both professional and lay.

How much disability or discomfort results from the procedure? The patient is most frequently an outpatient who devotes half a day at most for the procedure. He comes into the gastroscopy room fasting

early in the morning and is given a dose of phenobarbital, atropine and Demerol. About one hour later he gargles with 10 cc. of one-fourth per cent Pontocaine solution, lies on his left side, and the instrument is usually easily and readily introduced into the depths of the stomach. The interior of that organ is subjected to critical scrutiny of its visible portions for ten to fifteen minutes before withdrawal. The patient requires then another hour's rest to get over his sedation. An additional hour is usually added for safety if the patient is driving his own car. After then he can resume his diet—prior to two hours the anesthetized throat would render swallowing hazardous. Most patients complain of sore throat for twenty-four to forty-eight hours which is usually controlled by Tyrozette lozenges and warm saline gargles. More than half of our patients have been gastroscoped twice or more. We experience ready patient acceptance of a subsequent procedure despite the inherent element of discomfort.

What is the future of gastroscopy? I believe that newer instruments will probably conquer the invisible portions of the stomach and possibly be introducible into the duodenum. Recently Benedict and Shallenberger have reported large series of cases employing Benedict's operating gastroscope for biopsy purposes. A larger and more clumsy instrument is required and what is normally a very safe procedure is rendered definitely more hazardous without corresponding increase in worth-while information. The biopsies are still useless when negative and at the present time biopsy gastroscopy is probably without merit. Similarly, the employment of general anesthesia in gastroscopy which is done by Atwater of Atlanta further complicates the procedure and violates the principles of safety and simplicity which are virtues of normal gastroscopy.

#### DISCUSSION

Of what value is gastroscopy, viewed in the analysis of our cases?

After reviewing our relatively small series we feel that about twelve persons received really vital information that dictated appropriate therapy as a result of the method alone. This is only about five per cent. Another forty per cent received ancillary information useful but not critical in their total evaluation. About forty per cent received negative information which was of

limited or slight value to them. Perhaps ten to fifteen per cent derived no benefit at all from gastroscopy. Only one, or 0.4 per cent, incurred any real complication and this was of very short duration and of no lasting nature.

#### SUMMARY

In summary, I would like to stress the fact that gastroscopy is an occasionally useful ancillary, supplementary method of investigating patients whose gastrointestinal problem is not fully clarified by simpler procedures such as roentgenography. The procedure is simple, relatively safe and free of major discomfort but is limited by the

substantial area of the stomach not visible. The positive information derived is nearly always accurate and occasionally of great value to the patient; conversely, negative results are of infrequent value in patient management nor can negative findings often support reassurance to cancer-frightened patients and physicians. At the present time it is an exceptional procedure which it probably will remain until such time as improvements in instrument construction and technique are made. Recent so-called improvements seem actually to complicate and make somewhat dangerous what is normally a very safe method.  
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### GASTRIC RESECTION FOR COMPLICATED PEPTIC ULCER

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The purpose of this report is to present our experience, in a relatively short period of private practice, with gastric resection for complicated peptic ulcer. Gastrectomies performed for malignant disease will not be included.

No attempt will be made to review the exhaustive literature on this subject, but a few historic points will be mentioned. Up to 1920 the surgical method of choice for duodenal ulcer was gastro-enterostomy. At that time Von Haberer<sup>1</sup> in Europe first suggested the procedure of partial gastrectomy, with removal of the ulcer-bearing portion of the duodenum, as a definite curative remedy. Following this more radical operation, there was noted a marked reduction in the percentage of gastrojejunal ulcer. This complication had followed the operation of simple gastro-enterostomy with distressing frequency. This more radical operation did not immediately take hold in most sections of the United States because of the increased surgical risk. Berg<sup>2</sup> and Lewisohn,<sup>3</sup> how-

ever, adopted the procedure in this country and largely as a result of their interest, and their decreased incidence of ulcer recurrence, partial gastrectomy was instituted in other American clinics.

In discussing the surgical management of complicated peptic ulcer, we feel that the patient with gastric ulcer should be considered as an entirely different problem from one with duodenal ulcer. Whereas we feel, and I believe this is the consensus generally, that gastric ulcer is primarily a surgical disease, duodenal ulcer is primarily a medical one. The ulcerating lesion of the stomach proper is in itself a complicated peptic ulcer. The reason, of course, for this feeling is the possibility that the gastric ulcer may be, in reality, a malignancy. In a recent study by Cain,<sup>4</sup> a five year follow-up on 414 benign-appearing gastric ulcers which had been treated medically was carried out. In this group, cancer was present or developed in 10.4%. Medical management in the entire group was considered satisfactory

Read before the Association in annual session, Birmingham, April 17, 1953.

1. Von Haberer, J.: Anwendunophreiter and Vorteile der Magenresektion Bilroth I, Arch f Klin. Chir. 114: 127, 1920.

2. Berg, A. A.: The Mortality and Late Results of Subtotal Gastrectomy for the Radical

Cure of Gastric and Duodenal Ulcer, Ann. Surg. 92: 340-366, 1930.

3. Lewisohn, R.: The Frequency of Gastrojejunal Ulcers, Surg., Gynec & Obst. 40: 70-76, 1925.

4. Cain, James C., et al.: Medically Treated Small Gastric Ulcer, J. A. M. A. 150: 781-784, 1952.

in only 20.5% of the cases. In other groups of gastric ulcers studied, the incidence of malignancy has been as high as 20-25%. The fact that some healing of the gastric ulcer seems to occur by x-ray examination does not mean definitely that the ulcer is benign, since an ulcerating malignancy may also show some evidence of healing for a certain period of time. Recent reports by Ravdin, Horn, and others<sup>5</sup> indicate that cancer may develop in a previously benign gastric ulcer. Since the mortality rate in gastric resection for gastric ulcer is about 2%, the advantages in treating this lesion surgically seem to be well established.

As stated above, it is our feeling that duodenal ulcer is primarily a medical problem. Surgery would rarely be indicated for this condition if the patient with duodenal ulcer would co-operate with his physician and remain on a frequent-feeding medical program. It is only the complicated duodenal ulcer that is to be considered for surgery. The complications which may make gastric resection advisable are obstruction, intractable pain, and hemorrhage. The fact that a patient has had a perforation does not in itself give an indication for definitive surgery. We feel, of course, that the perforated ulcer should be closed surgically as rapidly as possible and the patient should then be managed medically. If he should have further pain or other symptoms while on a medical program, he should then be considered for gastric resection. This complication would then come under the heading of intractability.

Obstruction, partial or complete, is a very common complication. When it occurs, the patient should always be considered for definitive surgery. Many ulcer patients become temporarily obstructed during acute exacerbations, and these always respond initially to gastric drainage and intravenous fluids. If the obstruction persists or recurs, a real indication for surgery would then exist.

Intractable pain has been considered by many as the most valid reason for subjecting a patient with duodenal ulcer to surgery. This is one of the most difficult of the indications to evaluate properly. The economic status of the individual is fre-

quently a factor in deciding that a patient's disease is intractable. In considering this problem, which is a subjective one, we always rely to a great extent on x-ray findings to give us definite objective evidence of extensive disease. Even when extensive duodenal ulcer disease is found on gastrointestinal series, if the patient has not been treated medically, we insist on a thorough trial of medical management. The patient who continues to have severe ulcer symptoms while on a good medical program and who continues to show extensive disease on x-ray is then considered as intractable. This conservatism in selection of patients for surgery when the considered indication is intractability is of the utmost importance. It naturally results in a very small percentage of patients being accepted for surgery. We believe, however, that this conservatism increases good postoperative results very markedly.

Hemorrhage as an indication should be divided into massive hemorrhage and the chronically recurring small bleeding episodes. Massive hemorrhage may create quite a problem in management and judgment. Since it is a well known fact that the vast majority of patients who are bleeding will subside on conservative management, it seems reasonable to begin treatment conservatively and supportively. The patient, of course, should be carefully observed, and plans should be made for early surgical intervention if the bleeding continues or if it recurs within a short time after it has ceased. Regardless of age, it is our opinion that surgery should be performed within 24-48 hours after admission of the patient to the hospital, if he continues to show signs of bleeding while receiving good supportive care.

The chronically recurring small bleeding episodes are further evidence of the virulent nature of that particular individual's disease. These episodes indicate chronicity and usually intractability, and therefore, should be considered as indications for surgery in the same manner as intractable pain, which has been discussed above.

The surgical procedure in the definitive treatment of complicated peptic ulcer has now become well standardized. In this discussion we will not attempt to present the controversy of gastric resection versus vagotomy and gastro-enterostomy. Since gastric resection has proven, over a period of

5. Ravdin, I. S., and Horn, R. C.: Presented at Southern Surgical Association, Dec. 1952 (to be published).

many years, to give such excellent results with a low mortality rate,<sup>6, 7, 8, 9</sup> it does not seem proper or reasonable at this time to discard it for a procedure which gives more postoperative complications and which, as yet, has been somewhat unpredictable in regard to long term results. We do believe that there is one definite indication for vagotomy. This is the extremely rare case of marginal ulcer which develops after an adequate gastric resection. This should not occur, however, in more than 1-2% of adequately performed gastric resections. Vagotomy and gastro-enterostomy are sometimes considered to be the operation of choice when there is a great deal of inflammatory reaction about the ulcer, making identification of structures difficult and endangering the closure of the duodenal stump. We believe, however, that in the majority of these cases an adequate gastric resection can be carried out. This can be done by leaving the ulcer, removing all of the antral mucosa, closing the pyloric stump securely, and removing 75-80% of the stomach. However, when this cannot be done with safety, vagotomy and gastro-enterostomy would certainly be indicated. Various statistical studies in the literature give a 1% to 5% mortality rate for gastric resection for duodenal ulcer. It is observed that this is slightly higher than the mortality rate for resection for gastric ulcer. This is probably due to the fact that the closure of the duodenal stump is technically easier when the resection is done for gastric ulcer.

We believe that there are two extremely important points in doing an adequate gastric resection. These are (1) at least 75-80% of the stomach should be removed and (2) all of the antral mucosa should be removed. These steps will abolish the gastric phase of gastric secretion and will also remove a very large portion of the secreting gastric mucosa. Ideally, the ulcer should also be removed, and, in actuality, it is re-

moved in the vast majority of cases. However, if an adequate amount of stomach is resected and if all of the gastric antrum is removed, whether or not the ulcer itself is removed is of secondary importance. The exact technique of resection and re-anastomosis is also of lesser importance. We personally prefer the Hofmeister procedure with a short posterior loop, and this procedure has been used in all of the cases to be presented.

The data to be presented are based upon consecutive operations of gastric resection for benign ulcer disease during the past 4 years of private practice. Table I shows the total number of patients and types of ulcer. The indications for definitive surgery are shown in Table II, and the postoperative complications are listed in Table III.

TABLE I  
PATIENTS AND TYPES OF ULCER

Type of Lesion	Men	Women	Total
Gastric Ulcer.....	9	3	12
Duodenal Ulcer.....	15	2	17
Total .....	24	5	29

Age Range—31-77

TABLE II  
INDICATIONS FOR SURGERY

	Gastric Ulcer	Duodenal Ulcer
Presence .....	7	--
Obstruction .....	5	6
Intractability .....	--	9
Massive Hemorrhage .....	--	2

TABLE III  
POSTOPERATIVE COMPLICATIONS

	Gastric Ulcer	Duodenal Ulcer
Phlebothrombosis .....	0	3
Wound Infection.....	0	1
Dumping Symptoms .....	2	4
Deaths .....	0	0
Recurrence .....	0	0

Brief mention should be made of the so-called "dumping syndrome." The symptoms associated with this syndrome are those of weakness, fulness in the upper abdomen, dizziness, and sweating, occurring usually immediately after eating. We have found that these symptoms can be markedly reduced or eliminated by having the patient avoid the intake of liquids during a meal. As noted above, there were 6 cases with definite "dumping" symptoms. Of

6. Moore, Francis D., et al.: The Effect of Definitive Surgery on Duodenal Ulcer Disease, *Ann. Surg.* 132: 652-680, 1950.  
7. Levy, Albert H.: Partial Gastrectomy for Peptic Ulcer, *Ann. Surg.* 131: 330-340, 1950.  
8. Rauch, Robert F.: An Evaluation of Gastric Resection for Peptic Ulcer, *Surgery* 32: 638-653, 1952.  
9. Allen, Arthur W., and Welch, Claude E.: Subtotal Gastrectomy for Duodenal Ulcer, *Ann. Surg.* 124: 688-706, 1946.

these, 4 were classified as mild, 1 as moderate, and 1 as severe. In all of these patients, the symptoms subsided completely in 2-5 months after surgery except the one classified as severe. This is the only one in the entire series with symptoms at the time of the last follow-up visit.

The length of time since surgery in this series varies from 3 months to 4 years, but the average interval since operation is 2 1/3 years. A recent follow-up has been obtained in all cases except two. One of these was the patient mentioned above with persistent dumping symptoms. He was seen for a follow-up visit one and one-half years after surgery, but since then, he has moved to another state, and we were unable to contact him for a recent follow-up. The other patient was heard from approximately one year after surgery, when a member of his family reported that he was in Mexico, having resumed a professional gambling career. A few of the patients were found to have lost 5-10 pounds in weight since surgery, but the majority had maintained their weight, and a few had actually gained weight. Practically every patient stated that he is now eating 3 times daily and, at each meal, consuming the usual quantity of a regular meal for a normal individual. All patients have been able to eat food of any type that they desired. Among the questions asked each patient was: "Have you been able to lead a normal life since the operation?" All replied "yes." The final question asked was: "Have you been satisfied with your condition?" All replied "yes," and the answers from many were much more exuberant.

#### SUMMARY

Our experience with gastric resection for benign gastric ulcer and complicated duodenal ulcer has been presented. The two most important points in doing an adequate resection are (1) at least 75-80% of the stomach should be removed and (2) all of the gastric antrum should be removed. We naturally do not intend to prove anything by this relatively small group of patients, but it does at least show that 29 consecutive gastric resections have been done without a death and with no residual symptoms in the entire group except for the one case mentioned above with persistent dumping syndrome. All patients have been able to lead a normal life since the operation. We, therefore, feel that, at the present time, an ade-

quate gastric resection is an extremely satisfactory method of handling complicated peptic ulcer.

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**Coroner Versus Medical Examiner**—In the November 21 issue of the Journal of the American Medical Association, Dr. H. W. Turkel, coroner of the city and county of San Francisco, has drawn certain interesting conclusions from a comparison of the statistical reports of the coroner's offices of several counties of California with those of the medical examiner's offices of several cities and states elsewhere in the United States. For several reasons he concludes that the work done in the coroner's office studied "surpasses in quality and amount that done in any other type of system on which statistics were available." One reason for this conclusion is that a higher percentage of autopsies was performed by the coroners than by the medical examiners. Another is that more specimens were referred for special laboratory examinations by the coroners than by the medical examiners. Still another is that as a result of such tests the coroners of San Francisco and Los Angeles discovered a higher incidence of death from barbiturate poisoning than did the medical examiners of New York City or the state of Maryland. It is gratifying to hear that, despite the handicap of laws that fail to require the coroner to be a physician and that do require that he must run for office on a party ticket if he wishes to be reelected, the offices in Los Angeles and San Francisco function as well as they apparently do according to the statistics compiled by Dr. Turkel.

It should be obvious that the name under which the medical investigation operates, whether it be coroner or medical examiner, has nothing to do with the effectiveness with which his official duties are discharged. In 1942 the committee of the American Medical Association to study the relationship of medicine and law reported that the foremost requirement for the continued existence of a competent coroner's or medical examiner's office is a law that requires first that the office holder be professionally competent and second that he have both the authority and the facilities for the conduct of such investigations as are required in the interests of public welfare. Although the selection of coroners under some form of the merit system would appear to give greater assurance of professional competence than their election by popular vote, it should not be assumed that either all appointed medical examiners are good or all elected coroners are bad.

In extolling the advantages of the coroner's office, Dr. Turkel points to the fact that the medical examiner does not have the authority to hold an inquest. Certainly inquests need to be, and are, held in certain categories of violent or unexplained deaths under both the coroner and the medical examiner systems. The coroner ordinarily initiates and presides over the inquest. Under the medical examiner system the medical examiner ordinarily requests a legally competent magistrate to hold an inquest and appears before the magistrate with whatever evidence he may have.

## THE PROBLEM OF HEADACHE

## AN APPROACH TO CLASSIFICATION AND TREATMENT

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The complex problem of headache has been assiduously investigated by numerous men at many clinics. It is beyond the scope of practicality to delve deeply into the physiology and psychopathology inherent to this problem. Rather it is desired to present a simple classification, with discussion as to the involved mechanism, and suggestions as to treatment which may be of help to the doctor daily confronted with this complaint.

## NEURALGIAS

*Trigeminal neuralgia*, or *tic douloureux*, is a sharp, shooting, lancinating, paroxysmal pain involving one of the three divisions of the trigeminal nerve. It comes on in middle age and is precipitated by cold air or cold water. It is subject occasionally to remissions, but is an excruciating, incapacitating pain. The treatment consists of either injection of the peripheral branches of the nerve, or division of a portion of the posterior root of the trigeminal nerve by an intracranial approach. There has been some success with the use of large dosages of vitamin B-12, given as 1000 micrograms daily for ten days intramuscularly, or even intravenously. This latter therapy has not been as efficacious as might be desired, but has been used with some success in the more atypical types.

*Glossopharyngeal neuralgia* is a sharp, shooting, lancinating, paroxysmal type of pain that radiates from the tonsillar fossa down the throat and occasionally to the canal of the ear. This pain may be identified by cocainizing the tonsillar fossa and giving temporary relief. There is no other method of treatment of this disease except intracranial section of the ninth nerve as it lies in the cerebellopontine angle. This, however, can be done, as can the trigeminal rhizotomy, with little mortality or morbidity.

*Occipital neuralgia* is a rather rare condition characterized by the same sharp, shooting, paroxysmal type of pain radiating over the occipital nerve. This must be differentiated from the occipital neuritis to be described later. The treatment of occipital neuralgia, if it is severe and incapacitat-

ing, must be section of the peripheral greater occipital nerve.

*Sluder's*, or *sphenopalatine, neuralgia* must be mentioned only to be disregarded. It is such a vague entity that it probably falls into the vascular headache group to be discussed later. It is, however, identified as a constant or recurrent dull pain associated with lacrimation and swelling of the nasal mucosa. The pain is in and about the nose and medial portions of the face. It is said that cocainization of the sphenopalatine ganglion gives relief of this pain as a diagnostic measure. Actually cocainization of the sphenopalatine ganglion could give relief of numerous vascular headaches so that in all probability we are dealing with an atypical vascular headache rather than a specific entity.

## NEURITIDES

*Occipital neuritis* causes a dull, aching, constant pain which radiates along the course of the greater occipital nerve and which is usually related to arthritis of the upper cervical spine. The greater occipital nerve exists between C-2 and 3 on either side so that any arthritic proliferation at the intervertebral foramen could cause such pain. This is best treated by the use of deep x-ray therapy in light dosages, directed to this area. Occasionally injection of the nerve is indicated since the resulting paresthesias are bothersome. The use of vitamin B-12 again would seem to be indicated in this disease.

*Supraorbital neuritis* should be considered an entity. This is many times associated with frontal sinusitis. The sinuses should be excluded as a source of headache whenever a dull or rhythmic type of headache is found. It should also be mentioned at this point that eye disease is rarely a cause of headache of any sort except some cases of astigmatism. Supraorbital neuritis, again, must be treated with caution because of its proximity to the orbit and its contents. Alcohol injection of this nerve is not considered good treatment, nor is section of the nerve. However, x-ray therapy, if the eye is properly shielded, can be applied and again vitamin B-12 may be of

some benefit. Occasionally repeated injections with small amounts of Novocain will break the cycle so that the pain will disappear. Intracranial tumor or aneurysm must be excluded as a cause of this pain.

#### INCREASED INTRACRANIAL PRESSURE

The headache due to intracranial hypertension, secondary to tumor cerebri or any other space-occupying lesion of the brain or cranial vault, is a dull, generalized headache which is usually worse in the morning and which may be accompanied by vomiting, with or without nausea. The presence of a choked disc, or increased cerebrospinal fluid pressure by spinal puncture, makes the diagnosis of increased intracranial pressure and, of course, suitable therapy, usually surgical, must be employed.

#### DURAL IRRITATION, OR TRACTION

There are probably only two mechanisms which cause pain in and about the head. One is *irritation of the dura* by either infection or hemorrhage, or by *traction upon the dura*. The other is the *vascular mechanism* to be discussed later. It must be remembered in any discussion of headache that the dura mater is innervated largely by the first division of the fifth, or trigeminal, nerve. These twigs travel along the blood vessels supplying the dura mater. This is the reason a patient with meningitis has a severe headache, with pain referred to the eye, and photophobia. This is true, as is well known, in those cases of dural irritation by subarachnoid hemorrhage. Traction on the dura by either a tumor or aneurysm, with or without hemorrhage, causes pain by the same mechanism in that the filaments of the nerves are stimulated by a gross lesion. Obviously the treatment of such headaches is the treatment of the underlying disease, whether this be clipping or trapping the aneurysm, removal of the tumor, or treating the meningitis with the usual antibiotic agents.

#### TOXIC

These headaches, loosely grouped here, are seen with an azotemia or uremia, carbon monoxide poisoning, or associated with alcoholic over-indulgence. The mechanisms are probably vascular with resultant edema of brain cells. Toxic headaches are also seen in many febrile diseases. The treatment is incidental to the treatment of the underlying pathology.

#### VASCULAR

The most common types of headaches seen regularly in the practice of medicine are hardly an entity. Yet they must be classified as a group because of the mechanism involved. The headaches discussed above are more or less specific entities, the treatment for which is equally specific and usually successful. They are not related to any mysterious psychogenic maladies and most of us feel competent to deal with them. However, here we are faced with a multitudinous variety of pain about the head and neck which is most resistant to treatment over a long period of time. It is true that almost any change of treatment will cause some improvement in the number and degree of severity of these headaches for a short time. This would bear out the theory so often expressed by Dr. Wolff of Cornell that the headaches are functional and on a tension basis. This would not deny the existence of the headache by any means, nor would it deny the mechanism of production of the headache, which is that of vasodilatation of the extracranial vessels. As is well known, the preliminary phase in the production of a vascular headache is one of vasoconstriction followed by vasodilatation which causes the pain or the pounding headache. This may perpetuate itself to the point of further vasoconstriction with edema of the surrounding brain tissue. In this way migraine headache may persist actually for weeks with the doctor attempting to give vasoconstrictive drugs to relieve it when the vessels are already constricted. In such cases, a large dose of nicotinic acid, or histamine, is necessary to reverse the process.

*Migraine* headaches are vascular in origin but the close association of hypertonicity and tension preceding the onset of the headache causes one to feel that the same emotional instability and insecurity, with deep rooted psychiatric problems, probably are responsible for the changes in the vessels antecedent to the headache. The headache, clinically, is described as a unilateral dull, severe, throbbing pain which is usually preceded by visual aura which might be only blurring of vision but which may be shimmering scotomata. It is associated with nausea and vomiting and a marked feeling of mental depression. The pain is confined to one or the other side of the head and the pain may alternate. It is usually considered to be passed down through the family from

mother to daughter or from father to son, not so frequently from father to daughter or from mother to son. More likely the same stresses and tensions are transmitted to the progeny rather than the actual disease.

The treatment of migraine headache is so diversified as to point out the poor results of such treatment. The classic use of the ergot preparations, such as ergotamine and dihydroergotamine (D. H. E. 45) as well as ergotamine tartrate tablets under the tongue, in many cases allows the afflicted person to control the headache and live with it till the usual natural cessation about the time of the menopause. The coincidence of cessation of headaches, associated with the menopause, has led to some brutalities in surgery and castration by either surgery or irradiation. In those unfortunates personally seen after such a tragedy this has not given relief and it is the author's opinion that castration by any means for the relief of migraine headache is a fraud and its perpetration only adds the additional symptoms of a premature menopause.

It goes without saying that the ergot preparations control only a small number of the patients suffering from migraine headaches. For that reason there have been many and varied agents proposed. One of the more successful ones is the combination of ergotamine and caffeine in a tablet called Cafergot. This is taken orally in graduated dosages and many times controls the headache whereas the other ergot preparations do not. However, Cafergot has the disadvantage of causing a tremendous sympathetic reaction if it is taken in too many large dosages. The patient becomes exceedingly nervous and jittery and many times may prefer the headache.

It has been attempted by many investigators to give prophylactic medication in the hope of delaying the onset of the inevitable headache. This is done frequently by using mild sedatives and the pain cared for by narcotics at the time of the headache. This is a rather dangerous practice but sometimes the situation is so intolerable there is no choice. One must be warned that these patients, being emotionally unstable and insecure, readily become addicted to barbiturates, codeine, and Demerol. The use of morphine seems unjustifiable although the number of cases of Demerol addiction is also increasing. Therefore, these headaches should be treated with great care in so far

as the use of narcotics and habit forming barbiturates are concerned.

The use of Dilantin has shown considerable promise after the failure of other prophylactic drugs. This is probably due to the fact that the brain waves by electroencephalography of a patient suffering from migraine headache bear some similarity to those patients suffering from a true convulsive disorder. On that basis, Dilantin given once or twice daily in doses of  $1\frac{1}{2}$  grains has caused considerable relief and cessation of headache. This must be given prophylactically, however, and not therapeutically.

On the same basis a combination of Benadryl or other antihistaminics, with either nicotinic acid in large dosages, or hyoscine in small dosages, has also given relief prophylactically.

Vitamin B-12 has been used, as has almost everything else, with some enthusiasm but the author has seen very few cases which have responded to the drug.

A recent compound composed of caffeine, acetylsalicylic acid and a mild barbiturate, called Fiorinal, is taken at the onset of the headache. This has given more relief in more cases than the other preparations tried by the author.

Surgical intervention, with extirpation of portions of extracranial vessels, has been tried by many investigators, including the author. In the selected case such removal of the superficial temporal artery, or the middle meningeal artery, may give relief if the pain and headache are localized to the exact area. It must be cautioned, however, that in a true migraine headache this is not the case. The author has seen no patient suffering from migraine headaches benefited or relieved by such surgical intervention. Such surgery should be reserved for the temporal vascular type of headache, which will be discussed later, wherein the pain is always exquisitely localized and is relieved by Novocain injection about the artery.

The use of histamine, subcutaneously or intravenously, with the latter giving slightly more beneficial results, has been used by a great number of men and has given relief in a large number of cases. However, if these patients are followed closely it will be seen that there is usually a regression of the benefit and a recurrence of the headache

after a period of time. This seems to be true of almost all treatment of these vascular headaches.

Psychiatric treatment of these patients is probably the most important of all of the above mentioned agents. This need not be carried on by a psychiatrist per se but can be accomplished by the family doctor or father-confessor, as well and sometimes better than the trained psychiatrist. This probably is the most important aspect of the treatment. A depression must be carefully guarded against and the mechanisms of the tensions and underlying conflicts must be explained carefully to the patient so that she may learn to live with her headache with some degree of comfort and security.

*Histamine headaches*, as described by Horton, consist of a sudden onset of a usually unilateral headache associated with watering of the eye and reddening of the conjunctiva. These headaches generally come on in the early morning, awakening the patient. They have been treated successfully by Horton with histamine but, as noted above, the efficacy of the treatment wears off after a period of time and one is faced again with the use of the agents discussed above.

*Temporal vascular headaches*, which is only a localizing diagnosis of the usual vascular headaches, seem sometimes to be almost a specific entity. The temporal artery becomes enlarged and is consistent with our knowledge of dilatation of the extracranial vessels causing the pain. The pain is a throbbing, severe type of headache and is localized to the region of the temporal artery. The use of Novocain about the artery gives complete temporary relief. On that basis sometimes resection of the temporal artery will give permanent relief, although, since the basis is again probably one of tension, the headache may recur on the opposite side or become a suboccipital headache. It is wise to run through the armamentarium discussed above prior to resection of the artery.

There are many *atypical types* of headaches wherein the pain may include the face and neck. Tracing out of these vessels, however, leads one to find that the arteries involved emanate almost exclusively from the external carotid artery and that the maxillary or facial pain or the suboccipital pain is associated with a tender external carotid artery.

The treatment of these atypical vascular headaches is particularly difficult although the usual vasoconstrictive agents should be tried. It has been attempted by some surgeons to strip the adventitia of the external carotid artery in the neck or to ligate and remove a section of it. This has been successful on occasion but is probably a temporary expedient.

In *conclusion*, a discussion of the common types of pain about the head and neck has been carried out. It is realized that this is a superficial survey of the entire huge problem but it is hoped that this simple classification may be of some help to the general practitioner. It has been attempted to place the various procedures for relief of headache in their proper place rather than to magnify the efficacy of any one procedure. It remains for the physician of the future to slowly chip away at this problem so that more specific means to relieve headache may be discovered.

It is the author's belief that the greatest single factor involved in the precipitation of the vascular mechanism is that of underlying emotional tensions, instabilities, and insecurities. These would best be handled by a trained psychiatrist but it is also the author's belief that the father-confessor type of family doctor may give more relief to some patients than the specialist.

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**Surgery in Pulmonary Diseases**—Technical advances in surgery of the lung plus increased diagnostic acumen during the past decade have made many pulmonary lesions amenable to surgery which formerly were treated symptomatically or by medical methods alone. In the treatment of cancer, the most important factor is time. This is especially true in the case of bronchiogenic carcinoma when such a lesion may remain practically asymptomatic until inoperable. Although accurate diagnosis of pulmonary lesions is now often possible, there still remains a group of lesions which defy diagnosis. Continued observation of such lesions will often prove disastrous and may reflect discredit upon the physician for unwarranted procrastination.

Pulmonary surgery has proved of tremendous value in shortening the course of and bringing relief to sufferers from certain chronic diseases such as pulmonary tuberculosis, bronchiectasis, abscess of the lung and some of the mycotic infections. It has proved of value in such formerly hopeless conditions as metastatic malignant disease.

Other pulmonary conditions in which surgery is indicated include bronchiogenic and gastroenterogenous cysts, emphysematous blebs and bullae, benign tumors, arteriovenous fistulas, chronic granulomas, and certain indeterminate lesions. —Seiler, J. Florida M. A., Nov. '53.

# THE JOURNAL

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## CANCER SEMINAR

Birmingham

January 27 and 28, 1954

The Cancer Seminar scheduled for January 27 and 28, 1954 at the Tutwiler Hotel, Birmingham, will bring to Alabama distinguished authorities on the subject who will discuss the disease from many standpoints. At 9:30 A. M. on the first day Dr. Frank Kanthack of Atlanta will deal with the Role of the Dentist in the Early Recognition of Oral Cancer, and he will be followed by Dr. Michael Deddish of New York, on the Use of the Proctoscope in the Detection of Cancer, and Dr. Ross Golden, also of New York, on the Detection of Gastrointestinal Neoplasms.

In the course of the afternoon's program the Detection of Early Carcinoma in the Female Genital Tract will be discussed by Dr. John Wall of Houston, Texas; the Evaluation of Present Day Diagnosis and Treatment of Prostate Cancer, by Dr. W. W. Scott, Johns Hopkins Hospital, Baltimore; and Fibrocystic Disease of the Breast as an Obstacle to the Early Detection of Breast Cancer, by Dr. Frank Adair of New York.

The evening meeting will be a dinner affair, addressed by Professor William Boyd, University of British Columbia, Vancouver, on the subject Some Thoughts on Carcinogenesis.

The second day's session will occupy the morning only, the first speaker to be Dr. John Schenken, Omaha, on Neoplastic Diseases in Childhood; the second, Dr. Richard H. Overholt, Brookline, Mass., the Early Stages, Recognition and Treatment of Cancer of the Skin; and the last, Dr. Richard L. Sutton, Jr., Kansas City, the Early Detection of Skin Cancers.

Registration for the meeting will be from 8:30 to 9:30 A. M. on January 27th. The Alabama Division of the American Cancer Society, the State Medical Association, the Jefferson County Medical Society, and the Seventh District Dental Society of the Alabama Dental Association are sponsors of the Seminar.

## COLOR X-RAY FILMS USED FOR TEACHING

Diagnostic x-ray has taken on color. An adaptation of a process developed by the Eastman Kodak Company, Rochester, New York, for making full color photographs

from ordinary black and white negatives was described in the October American Journal of Roentgenology, Radium Therapy and Nuclear Medicine.

"The process allows for expression beyond the latitude of purely mechanical methods and permits a very acceptable finished result without the loss of roentgenographic detail," according to Dr. Andrew H. Dowdy and Dr. Louis J. Bonann.

Dr. Dowdy is director of the department of radiology at the University of California School of Medicine at Los Angeles, and Dr. Bonann is associated with the department.

"The expense of this process is minimal as compared to the actual cost of drawings made from roentgenograms to illustrate the anatomical details required in teaching normal anatomy and the delineating pathological abnormalities for beginning medical students," they said.

"From the artist's standpoint, drawing is tedious and much of the sharp detail seen by the lens is eliminated. Efforts to paint directly on black and white regular roentgenograms have been completely inadequate and appear too artificial. Original charcoal, pencil, and other drawings may be photographed and give a fair result. Still, the realism of a colored roentgenogram is not duplicated with this type of procedure."

The technique begins with the selection of an ordinary photographic negative from a selected x-ray picture. Matrix film is exposed by enlargement or contact through the negative, with the emulsion side of the latter away from the light source.

The result is a transparency ready for coloring. This is accomplished through the use of Kodak Flexichrome color dyes which are absorbed by the gelatin image in direct proportion to the varying thickness of the emulsion. The resultant colors are incorporated within the emulsion. Colored prints are then rephotographed on 35 mm. color film and projected as slides.

The report said the process was developed as a teaching medium for the new School of Medicine of the University of California at Los Angeles. Brilliant colored transparencies of an x-ray picture were desired as illustrations for the formal lectures on roentgenology.

Color was first projected into the realm of diagnostic roentgenology in Wales in

March 1949. Another method was announced at the annual meeting of the Radiological Society of North America in Chicago in December 1950. The latest procedure is an adaptation and simplification of the latter.

The Journal is the official publication of the American Roentgen Ray Society and American Radium Society.

#### AAGP ANNUAL ASSEMBLY

The American Academy of General Practice makes the first official announcement of its Sixth Annual Scientific Assembly which will be held March 22-25, 1954 in Public Auditorium, Cleveland, Ohio, by disclosing the names of such topflight men as Sir Alexander Fleming, Dr. Howard Rusk, and Dr. E. J. McCormick who are headlining the scientific program.

Actually, the entire program will be presented by men of equal note and by leaders in the fields to be covered. Family doctors who have already heard of the meeting term it the most significant and interesting yet presented by the Academy. The program itself will be fast-paced, well diversified, and completely applicable to daily practice.

The Committee on Scientific Assembly, headed by Dr. John Mosher of Coeymans, N. Y., promises that these four days will unquestionably be the most pleasant, as well as the most instructive, doctors have ever spent at a medical meeting.

A quick look at the program shows symposia on peptic ulcer, tuberculosis, headache and dizziness, and antibiotics, a live clinic on rehabilitation procedures, presentations on the commonly missed diagnoses of skin diseases, the almost forgotten woman—the routine multipara, and unnecessary gynecologic surgery. Arthritis, anemia, surgical problems and recent advances in therapeutics will also be covered.

To supplement the formal lecture program, the Committee is putting together a scientific exhibit section of equal distinction and interest. The list is still in process of selection, but it will include more than 60 exhibits. At least half of them will be original, making their debut at this meeting. All of them will be closely integrated with the lecture program.

A full social program is being planned for

the wives, culminating with a President's Reception, the first the Academy has had, for the entire attendance.

#### SEMINAR IN OPHTHALMOLOGY AND OTOLARYNGOLOGY

The eighth annual University of Florida Midwinter Seminar in Ophthalmology and Otolaryngology will be held at the Sans Souci Hotel in Miami Beach the week of January 18, 1954. The lectures on Ophthalmology will be presented on January 18, 19 and 20, and those on Otolaryngology on January 21, 22 and 23. A midweek feature will be the Midwinter Convention of the Florida Society of Ophthalmology and Otolaryngology on Wednesday afternoon, January 20, to which all registrants are invited. The registrants and their wives may also attend the informal banquet at 8 p. m. on Wednesday. The Seminar schedule permits ample time for recreation.

The Seminar lecturers on Ophthalmology this year are Dr. W. B. Anderson, Durham, N. C.; Dr. W. P. Beetham, Boston; Dr. W. C. Owens, Baltimore; and Dr. A. B. Reese and Dr. M. C. Wheeler, both of New York City. Those lecturing on Otolaryngology are Dr. E. N. Broyles, Baltimore; Dr. H. P. House, Los Angeles; Dr. W. J. McNally, Montreal, Canada; and Dr. Dorothy Wolff and Dr. D. Woodman, New York City.

#### NINTH INTER-AMERICAN CONGRESS, PAN AMERICAN MEDICAL ASSOCIATION

More than 2500 doctors and medical researchers from 22 nations of the Western Hemisphere will exchange information on the latest developments in medicine, surgery and related fields during a 16-day medical congress to be held in six South American cities and aboard ship en route from New York to these ports, according to Dr. Charles Crocker of San Francisco, Executive Secretary of the Pan American Medical Association.

This twenty-six-year-old organization of doctors, which annually brings together leaders in all branches of medicine and public health, will sail from New York January 6 with over 700 U. S. doctors and their families and associates to meet with their colleagues at this year's conference meeting-points in Caracas, San Juan, Ciudad Trujillo, St. Thomas and Havana, Dr. Crocker added.

Characterizing the Congress as "a model demonstration of intercultural exchange, showing what private citizens as well as governments can do to promote better and warmer understanding among peoples and nations," Dr. Crocker further commented that it exemplified his association's credo: "The practice of medicine has no national, racial or religious boundaries." He pointed out that through the diverse national interests represented there runs a common bond of humane interest in the welfare of people in general, irrespective of race, creed or nationality. "We meet," he said, "aship and ashore, to exchange knowledge and research and experience in the symbiotic world of medical science."

The schedule of scientific sessions is planned to include all branches of medicine and surgery as well as allied professions. Among those listed are allergy, anesthesiology, broncho-esophagology, cardiovascular diseases, dentistry, dermatology, diabetes, endocrinology, forensic medicine, gastro-enterology, general surgery, geriatrics and gerontology, gynecology and obstetrics, hospital administration, industrial and traumatic surgery, industrial medicine, internal medicine, medical jurisprudence, medical education, military medicine, neoplastic diseases, neuropsychiatry, neurosurgery, ophthalmology, oral surgery, orthopedic surgery, otorhinolaryngology, pathology, pediatrics, pharmacology and new drugs, plastic surgery, public health and preventive medicine, pulmonary diseases, proctology, physical medicine and rehabilitation, roentgenology, rheumatic and arthritic disorders, therapeutics and nutritional research, diagnostic roentgenology, thoracic surgery, tropical medicine, and urology.

Papers in these fields will be presented each morning of the Congress, on ship and ashore. The afternoons will be occupied with panel discussions, presentations of scientific exhibits, and the showing of sound and color films concerning new techniques and recent results of clinical and laboratory research.

Special sessions concerning "The Problem of Nutrition in the Western Hemisphere" will be conducted in Venezuela and Cuba, led by Dr. E. V. McCollum of Johns Hopkins University and Dr. Arthur Lejwa of Long Island University. Other special sessions will be held in LaGuaira, San Juan, Ciudad Trujillo and Havana.

Various supplementary events in these Congress-cities have also been arranged by the members of the chapters of the Pan American Medical Association which embrace the leaders of the medical profession of their countries.

#### FOUNDATION FOR ALLERGIC DISEASES

Announcement of the formation of the American Foundation for Allergic Diseases has been made by Dr. Horace S. Baldwin of New York, president of the Foundation. The newly formed organization is now in operation with headquarters at 525 Lexington Avenue, at 49th Street, in New York.

"The need for some central organization to stimulate and coordinate activity in the allergy field has been manifest for some time," Dr. Baldwin said. "As every allergist knows, these diseases cause widespread and severe disability, they are far-reaching in their general systemic effects, yet specialized facilities for research, medical education and treatment lag far behind those for many other chronic conditions."

In his announcement Dr. Baldwin said that in 1952 a fact-finding survey was undertaken by members of the Executive Committee of the American Academy of Allergy and the Board of Regents of the American College of Allergists who studied the problems and objectives to be gained from joint participation, and to determine the precise areas of need for such a foundation.

The joint group, Dr. Baldwin said, set forth basic principles on which the Foundation would operate, outlined a program of activities, and defined joint supervision and sponsorship by the Academy and the College. With the findings of the survey, the two groups organized the Foundation which was incorporated in the state of New York as the American Foundation for Allergic Diseases, Inc., a national, voluntarily supported, non-profit organization.

Officers of the Foundation, besides Dr. Baldwin, are Dr. J. Warrick Thomas of Richmond, Va., vice president; Dr. Bret Ratner of New York, secretary; and Dr. Theodore L. Squier of Milwaukee, Wis., treasurer. In addition, a board of trustees of twenty prominent allergists representing all sections of the United States was chosen.

Statistics of the National Institutes of Health, U. S. Public Health Service, have

revealed that there are 3,900,000 sufferers from asthma and hay fever in the United States, ranking these two diseases third in prevalence among chronic diseases in this country. These two diseases account for 24,750,000 work days lost each year. There are probably more than 3,000,000 other sufferers from allergic diseases among those afflicted with chronic bronchitis, sinusitis, chronic eczema, industrial dermatitis, poison ivy, drug sensitivities and connective tissue diseases.

The wastage of training and manpower among the Armed Forces due to allergic diseases can be estimated from a report which reveals that an average of 45 sick days was recorded for each of 1,175 asthma patients in Navy hospitals in 1942. Of all veterans on pension rolls in 1951, 4.42 per cent, or 99,456 veterans, were pensioned because of chronic allergic conditions.

Asthma alone is a leading factor in over 10,000 deaths in the United States each year.

"The difficulties of getting adequate treatment for the average asthma patient of moderate means can be cited as just one illustration of the deficiencies of treatment facilities," Dr. Baldwin said. "It is common experience that most general hospitals will not accept such patients because of the prolonged period of intensive medical and nursing care required. Hospitals treating acute diseases are reluctant to admit asthma patients because of the chronicity and the probable long-term stay, and the institutions for chronic care are poorly equipped to treat asthma. There is also a deficiency in the number of allergy clinics.

"Organized research on any sizable scale is likewise lacking. Some promising discoveries have been made recently in the mechanisms and therapy of allergic diseases, but these are often the accomplishment of individual workers and practitioners, operating in their spare time and with limited facilities," Dr. Baldwin said.

"Trained investigators, who can give full time," Dr. Baldwin said, "are being attracted into other fields. Furthermore, the research that is being done under present conditions is frequently duplicated in several clinics and laboratories at the same time, resulting in inefficient efforts and wasted opportunities.

"The teaching of allergy in the medical schools is haphazard and inadequate. In

some medical schools, allergy is neglected entirely. Due to the lack of hospital and clinic services, interns and residents have few opportunities for observation of patients. As a result there is a dearth of well trained young specialists."

By the terms of the charter of the American Foundation for Allergic Diseases, the Foundation is to promote through public education an accurate understanding of the problems of allergic disease; to inform and educate the medical profession in the problems of allergy; to cooperate with medical institutions, hospitals, and other organizations in the development of facilities for the treatment and prevention of allergic diseases; and to finance facilities for research in the field of allergic diseases, including fellowships and residences. Provision is also made for the eventual establishment of local or regional branches of the central organization.

#### FELLOWSHIP IN INDUSTRIAL MEDICINE

The Institute of Industrial Health of the University of Cincinnati will accept applications for a limited number of fellowships offered to qualified candidates who wish to pursue a graduate course of instruction in preparation for the practice of industrial medicine. Any registered physician, who

is a graduate of a Class A medical school and who has completed satisfactorily at least two years of training in a hospital accredited by the American Medical Association may apply for a fellowship in the Institute of Industrial Health. (Service in the Armed Forces or private practice may be substituted for one year of training.)

The course of instruction consists of a two-year period of intensive training in industrial medicine, followed by one year of practical experience under adequate supervision in industry. Candidates who complete satisfactorily the course of study will be awarded the degree of Doctor of Industrial Medicine.

During the first two years, the stipends for the fellowships vary, in accordance with the marital status of the individual, from \$2,100 to \$2,700 in the first year and \$2,400 to \$3,000 in the second year. In the third year the candidate will be compensated for his service by the industry in which he is completing his training.

A one-year course, without stipend, is also offered to qualified applicants.

Requests for additional information should be addressed to the Institute of Industrial Health, College of Medicine, Eden and Bethesda, Cincinnati 19, Ohio.

## THE ASSOCIATION FORUM

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

### GOOD SIGNS

W. A. Dozier, Jr.

Director of Public Relations

The annual survey of accident and health coverage in the United States, as of December 31, 1952, has recently been released. This study is prepared each year by the Health Insurance Council. The Council consists of nine associations in the insurance business; and these associations, in turn, are made up of companies which write the various forms of protection against hospital, surgical, and medical costs and the loss of income due to disability.

The insurance companies have set up the Council so that it may function as a "central source for practical and technical guidance

to medical groups and hospital administrators in connection with the development and use of its accident and health benefits, and as a source of information concerning this type of insurance."

The 1952 survey has some most interesting facts and figures to present. At the end of 1952 there were 91,667,000 people of the United States protected against hospital expense; this figure represents a 7 per cent gain over 1951. Those protected against surgical expense numbered 73,161,000, or a 12 per cent gain over 1951. The relatively new type of coverage for medical expense showed the highest percentage gain, 29 per cent, which was an increase from 27,723,000 in 1951 to 35,797,000 in 1952.

These figures show that nearly three out

of five persons in our entire population have voluntarily protected themselves against the costs of hospital care in the event of accident or illness. Present day coverage usually pays for operating room use, laboratory and x-ray examinations, medicines, and other services for medical care and treatment that the hospital furnishes.

Insurance companies or Blue Shield are the major ones offering surgical expense protection; and when the services of a surgeon are needed, payments are made in accordance with a schedule of fees which fixes the maximum reimbursement for each type of operation.

The survey points out that medical expense protection is essentially a post World War II development. For example, it is estimated that in 1941 only about three million persons had such coverage. Compare that with the figure for 1952 given above, and you see how rapid the growth has been. The survey says, "By far the greatest part of medical expense protection is provided by Blue Shield, local medical societies, and insurance companies, and a wide range of benefits is available. The most common form of this coverage calls for the payment of benefits toward the expense of in-hospital calls by doctors for other than surgical treatment. Likewise available are other forms providing for comprehensive medical coverage of home, hospital and office treatment and examinations. In some cases, too, medical expense protection provides benefits for paying the cost of special laboratory, x-ray and other examinations for diagnostic purposes."

One point of interest is found in the fact that more people are covered by insurance companies for both hospital and surgical expenses than are covered by Blue Cross or Blue Shield and medical societies. Thus one sees how strong an ally the medical profession has in its efforts to increase voluntary coverage.

If one looks at the picture regionally, he finds that in the South, which for the purposes of this study extends south and west from Maryland and Delaware to Kentucky to Oklahoma and Texas inclusive, there are great strides yet possible. In this region there is a population of some 48,616,000, while those covered are 20,002,000 for hospital, 16,707,000 for surgical, and 7,622,000 for medical expenses.

In Alabama, which has a population of over three million, one finds that our citizens have protected themselves with the following coverage: 993,000 hospital, 890,000 surgical, and 560,000 medical.

The picture each year is more heartening even though there is still room for improvement.

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**Infectious Mononucleosis**—I recently saw a seven-year-old white boy who had been treated for rheumatic fever for three months. At the onset, he had sore throat, fever, joint pains, high sedimentation rate, and leucocytosis. He was given the usual treatment for rheumatic fever with bed rest and a guarded prognosis because of the prolonged fever. He was referred to a cardiologist to determine if there was any heart involvement. A negative report was received and his blood work was repeated. The picture was typical of infectious mononucleosis and after therapy he was allowed to resume normal activity. Of course, his family was very relieved because of the much more favorable prognosis with no cardiac complications to arise later. Another patient, a 25-year-old Negro male with a diagnosis of lymphocytic leukemia, was seen with fever, severe anemia, generalized lymphadenopathy, enlarged liver and spleen, jaundice and marked loss of weight. A routine heterophile antibody study showed a very high titer and closer examination of the lymphocytes showed them to be the usual atypical cells seen in infectious mononucleosis. After transfusions and active therapy, he had complete remission and two years later has no evidence of recurrence. The distinction between infectious mononucleosis and infectious hepatitis, while often difficult, is not nearly so urgent because the therapy for both illnesses is along similar lines and the immediate and ultimate prognosis of the two is not so widely divergent.

No specific therapeutic agent for infectious mononucleosis has been definitely established. Sulfa drugs and penicillin may benefit a complicating streptococcal throat infection. Convalescent serum has given dramatic results in some severe cases. Human plasma and gamma globulin have occasionally appeared to be beneficial. Aureomycin and Chloromycetin seem effective in some cases when started early. Hepatitis or liver involvement is extremely common and when it occurs should be treated exactly like cases of acute infectious hepatitis. A program of bed rest for several weeks is very important in the treatment, and the patient should avoid strenuous exercise and abstain from the use of alcohol. A high protein, high carbohydrate, fat-free diet is advisable. Choline and methionine should be used and amino acid intravenously may be helpful as supportive therapy. The most important aspect of the symptomatic therapy in acute infectious mononucleosis is rest. This means the patient should remain in bed at least several days after the temperature returns to normal; he should stay away from work a few days more.—*Quattlebaum, J. M. A. Georgia, Nov. '53.*

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D. G. Gill, M. D.

State Health Officer

### KEEPING OLDER PEOPLE ACTIVE

Contributed by

John M. Gibson, Director

Division of Public Health Education

When we think of rehabilitation, we usually think of younger people. We think of school-agers who have been injured at work or at play and need help in recovering their ability to do normal school work or to get jobs. We think of young adults who have suffered physical handicaps just as they were starting out in their careers and need assistance in order to support themselves and their families. And we think of the middle-aged, who have fallen victims to the diseases peculiar to their age period or to the accidents to which their particular kinds of work make them especially susceptible. But we seldom think of rehabilitation in terms of old people. Our thinking seems to be based largely on the theory that old people don't have long to live anyhow. It will not be long before senility, arbitrary retirement rules and other factors will prevent them from working. So, we ask, why go to a great deal of trouble and expense to get them rehabilitated?

But that kind of thinking is unsound. It is economically unwise. And it shows a callousness toward older people, most of them eager to work and work hard as long as they can, which is unfair. It may even be actually cruel.

For one thing, rehabilitation is not limited to the restoration of the ability to earn money, although, in our cold-blooded disregard of human feelings we have tended to limit its meaning to that. It also means the ability to play with one's grandchildren. It means being spared the embarrassment, humiliation and hurt feelings due to having to depend upon others for little services a normal person would much prefer to do for himself. It means the ability to walk to a nearby park and watch from the safety of a park bench the flood of humanity stream

by. It means being able to attend gatherings arranged for the elderly segment of our citizenry. It means the ability to live over a dead-and-gone-but-not-forgotten past with fellow survivors of that past. It means being able to make one's own contribution to the work of the world, including that done for pleasure and the thrill of helping others, as well as that done for money.

Rehabilitation is of unusual concern to the elderly for two reasons. First, older people are more likely than younger ones to need it. In the second place, it is often, or usually, more difficult to rehabilitate an old than a middle-aged or young person.

"Age brings increasing probability of disablement," Dr. Arthur C. Jones, of Portland, Oregon, pointed out in a paper read at a meeting of the Oregon State Medical Society. He went on:

"We all face the possible effect of wear and tear, cardiac and vascular damage, arthritis, or any combination of the chronic ailments to which we are all prone. There is a tendency toward dilapidation of the body, later of the mind. This dilapidation need not occur in many oldsters, or may be minimized and postponed by application of the modern technics of rehabilitation."

There are of course many definitions of the term *rehabilitation*. To one person it means one thing, to another another. In a broad sense, rehabilitation is the primary task and responsibility of every doctor, including many who never think of being engaged in that work. For is it not the doctor's main job to restore the sick and injured to normal activity and health? And does that not lead directly to restored, or improved, earning capacity, the ability to do a better job and make more money? A sick person is a drag upon his fellows, whether he be a soldier in a hospital near the fighting lines, a youngster who requires extra time and help from his teacher in order to make his grade at term's end, a star pitcher on the high school baseball team who is kept out of big games by injuries, or a state employee whose work must be done by others while he is fighting a case of pneumonia or nursing a broken leg. The doctor who speeds up recovery in any case that has been mentioned, or in almost any other, is cer-

tainly engaged in rehabilitation work, even if he doesn't think of his work in that way.

The elderly of course are under physical handicaps which come automatically with the passage of time. A person in his 60's or 70's does not have the "pep" he had when he was younger. If his job is one calling for considerable physical strength, he almost certainly finds it difficult to hold his own against younger, stronger and more vigorous men. Older people cannot lift the heavy packages they used to lift. They cannot expose themselves to unfavorable working and weather conditions that younger people can face without fear or danger. They cannot put in the long working day that may be necessary in times of emergency. Their steps are slower. Their hands move less steadily. In many cases, they do not have the physical resistance to disease germs they used to have: A bad cold that a younger worker can throw off as readily as his safety goggles may keep an older worker abed for two weeks or longer. Wonderful indeed is youth.

Even the older worker outside the manual field finds himself under a handicap in competition with comparative youngsters, although in a different way and perhaps to a less marked degree. Even at the executive level, a person needs to be at least fairly strong. His mind needs to—in fact, must—be clear. He dare not be plagued by pain here and there in his body. Since he carries heavy responsibility, with many workers' jobs and many stockholders' savings dependent upon his doing a satisfactory job, he must be personally efficient. And personal efficiency, even at top levels, or perhaps one should say especially at top levels, calls for relatively good health. And a big corporation or governmental agency cannot afford to have its key men absent for long periods because of sickness or for any other reason.

Not only do the multiplying years bring their automatic slow-down of physical energy and greater susceptibility to the well known diseases to which all of us are susceptible. They also bring their own baffling category of diseases, those to which younger people need hardly give more than passing thought, except in sympathy for the elderly. The middle-aged, for example, have much less to fear from heart disease than those nearer the retirement age. Cancer attacks people of all ages, it is true. But

it is of greater concern to the elderly. Such conditions as hardening of the arteries, high blood pressure, diabetes, stomach ulcers, nephritis (or Bright's disease), arthritis and rheumatism find most of their victims among those who have passed middle age.

The diseases that have been mentioned, or most of them at any rate, are different from other forms of illness in another respect too: They are more disabling than most others. Unlike most of the illnesses that afflict young people, they are not acute but chronic. You don't get over one of them after a short but intensive period of treatment at home or in the hospital. And they are much more likely than those other diseases which have been mentioned to leave their victims more or less permanently disabled. As Dr. Jones has told us: "Cure of chronic illness or disability, in the absolute sense, is generally impossible."

But Dr. Jones is not as pessimistic regarding chronic illness, including chronic illness among the elderly, as you might think from what has just been quoted. For he also says: "Control is possible, and it is the logical goal of the doctor and his elderly patient. Partial rehabilitation and improvement are always possible and frequently dramatic."

Still another aspect of increasing age makes more complicated and troublesome the problem of rehabilitation, as it particularly affects this age group: The same sapping of physical strength which makes it hard for the elderly to compete on even terms with younger people in manual labor jobs, and, to a certain extent, in jobs requiring education and judgment, increases their likelihood of being incapacitated by accidents. In other words, the elderly are more "accident prone." A young person darting across the street ahead of an on-rushing truck has a much better chance of making it than an older person. Eyes dimmed by the years cannot watch spinning machinery and keep out of its way as readily as the eyes of youth. Stepladders are usually not as safe for elderly people as for younger ones. The young and middle-aged have a catlike ability to protect themselves against serious injury when they fall. But older people usually fall like a dead weight. And old bones are more brittle than young ones. They break much more easily. And, even worse, they heal much more slowly, if at all.

With the elderly, as with the rest of us, rehabilitation has recently taken on a new emphasis. It searches for and tries to develop unimpaired abilities and capabilities, instead of paying so much attention to handicaps and impairments. Even a person with a serious physical handicap usually has within himself the capacity for much work, if he is properly trained and properly aided. That is true of the older person as well as the young or middle-aged.

You do not need to be reminded that the life span is constantly being lengthened. People are living longer. They have more time between the normal retirement age and total incapacity or death. That has added heavily to the rehabilitation problem. It is unfortunately true that medical science has not been as successful in keeping people healthy and strong in their later years as it has been in adding to those later years. One may wonder whether a person is much better off living longer than people used to live if those "gift" years are made unhappy by physical impairments, pain and perhaps economic dependency.

Speaking both for himself and for another authority on the problem of rehabilitation among the elderly, Dr. Jones has a few words of criticism for some of his fellow physicians in the matter of disability due to one specific cause, heart disease. "The cardiac (heart disease) invalid may often remain an invalid because the physician has over-emphasized the dangers of activity," he said in the paper already referred to, which has been published in *Northwest Medicine*. Then he quotes Dr. Marvin Becker as saying: "It is unfortunate that the physician must be indicted as a major pathogenic agent in the cause of cardiac disability." This criticism, both of these medical authorities believe, should be directed at what they consider their fellow physicians' over-caution rather than to any lack of eagerness to minimize their heart disease patients' rehabilitation problems. Speaking of the typical physician who errs on the side of over-caution, Dr. Jones says:

"... He often errs to protect himself, and may precipitate anxiety symptoms more crippling than heart disease itself. Fear that heart disease is incapacitating is a common cause of disability. The cardiac can and does work. . . . Reemployment and rehabilitation are the greatest forms of therapy for patients with slight to moderate heart disease. . . ."

The very fact of being up and about is a great help to morale and to general health. As Dr. Jones reminds us:

"It is important to get old people upright, and to walk, even briefly, if at all possible. The influence of mere weight-bearing for a brief period each day has shown results amply in improvement of nitrogen balance, calcium and phosphorus balance and bone metabolism, beneficial circulatory effects, and influence on the kidneys, muscles, coordination and balance. The need for anyone to be able to negotiate a curb, a few steps, or cross the street between two red lights is obvious, and patients may require months of drill and help before they master such seemingly simple activities. Mastery brightens the morale of disabled person remarkably."

We shall hear a great deal more about rehabilitation in the future than we have heard in the past. Let us be sure that, in our planning for restoring the disabled to usefulness and self-reliance, we do not overlook the oldest among us.

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director

SPECIMENS EXAMINED

September 1953

Examinations for diphtheria bacilli and Vincent's .....	421
Agglutination tests .....	1,187
Typhoid cultures (blood, feces, urine and other) .....	972
Brucella cultures .....	19
Examinations for malaria .....	191
Examinations for intestinal parasites .....	3,093
Serologic tests for syphilis (blood and spinal fluid) .....	29,923
Darkfield examinations .....	5
Examinations for gonococci .....	1,511
Examinations for tubercle bacilli .....	3,340
Examinations for meningococci .....	0
Water examinations .....	1,685
Examinations for Negri bodies .....	77
Milk and dairy products examinations .....	5,028
Miscellaneous .....	1,443

Total 48,895

1954 MEETING  
OF THE ASSOCIATION  
ADMIRAL SEMMES HOTEL  
MOBILE  
APRIL 15-17

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

	1953		
	Aug.	Sept.	E. E.* Sept.
Typhoid and paratyphoid fever.....	14	9	8
Undulant fever .....	7	3	1
Meningitis .....	10	9	7
Scarlet fever .....	15	28	37
Whooping cough .....	25	43	39
Diphtheria .....	24	28	48
Tetanus .....	4	4	6
Tuberculosis .....	184	147	232
Tularemia .....	2	0	0
Amebic dysentery .....	1	1	3
Malaria .....	8	0	23
Influenza .....	45	77	46
Smallpox .....	0	0	0
Measles .....	29	27	16
Poliomyelitis .....	96	53	42
Encephalitis .....	0	0	1
Chickenpox .....	6	6	4
Typhus fever.....	0	0	17
Mumps .....	38	15	26
Cancer .....	562	370	295
Pellagra .....	2	1	2
Pneumonia .....	98	103	74
Syphilis .....	142	211	1177
Chancroid .....	9	7	14
Gonorrhea .....	414	384	483
Rabies—Human cases .....	0	0	0
Positive animal heads .....	53	25	0

As reported by physicians and including deaths not reported as cases.  
\*E. E.—The estimated expectancy represents the median incidence of the past nine years.

**Diabetes in Childhood**—The child whom you have just found to have diabetes is literally dying. There are methods at your disposal which will save his life but it will take a great deal of your time, your patience and your knowledge. This will prove to be a relatively unremunerative case. For the next few days you will spend much time in altering this vicious sequence of events and in orientating the confused and disturbed parents, not to mention the tedious hours of instruction as you literally become the life-long guardian of this child's physical and emotional development. If you do not wish to undertake this obligation, refer the child to someone who does.

In the younger child the parents are obligated to learn the facts of control; the child, however, being taught to do urine testing and even to give his own insulin as early as possible. A diabetic child is reared as all children should be. They must not be treated as afflicted children. They must be taught at an early date self discipline and self reliance. They tend to develop a sense of responsibility and to mature earlier than the average child. When well controlled, they are a healthy lot and tend to be above the average in general intelligence.—Rippy, J. Louisiana State M. Soc., Nov. '53.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR JULY 1953, AND COMPARATIVE RATES

Live Births Stillbirths and Deaths by Cause	Number Registered During July 1953			Rates* (Annual Basis)		
	Total	White	Colored	1953	1952	1951
Livebirths .....	7800	4766	3034	29.0	28.2	27.4
Stillbirths .....	183	85	98	22.9	24.6	23.1
Deaths, stillbirths ex- cluded .....	2133	1279	854	7.9	9.0	8.6
Infant deaths:						
under one year .....	248	110	138	31.8	34.2	36.2
under one month .....	185	95	90	23.7	23.0	24.7
Cause of Death						
Tuberculosis, 001-019 .....	39	16	23	14.5	13.9	24.8
Syphilis, 020-029 .....	9	2	7	3.3	2.6	5.0
Typhoid and paraty- phoid, 040, 041 .....					0.4	
Dysentery, 045-048 .....	4	1	3	1.5	1.1	2.7
Diphtheria, 055 .....					0.4	
Whooping cough, 056 .....						1.5
Meningococcal infec- tions, 057 .....	4	4		1.5	1.1	0.8
Poliomyelitis, 080-081 .....	7	1	6	2.6	1.9	3.4
Encephalitis, 082, 083 .....					1.5	0.8
Measles, 085 .....					0.4	0.8
Malaria, 110-117 .....					0.4	
Malignant neoplasms, 140-205 .....	275	200	75	102.1	106.9	99.3
Diabetes mellitus, 260 .....	22	17	5	8.2	12.8	11.1
Pellagra, 281 .....	2	1	1	0.7	1.5	0.4
Vascular lesions of central nervous sys- tem, 330-334 .....	250	143	107	92.8	111.0	96.7
Other diseases of ner- vous system and or- gans of special sense, 340-398 .....	27	18	9	10.0	14.7	13.8
Rheumatic fever, 400-402 .....	2	1	1	0.7	2.3	1.1
Diseases of the heart, 410-434 .....	496	335	161	184.2		
Hypertension with heart disease, 440- 443 .....	142	78	64	52.7	257.4	244.5
Diseases of the arte- ries, 450-456 .....	38	24	14	14.1	16.9	13.0
Other diseases of cir- culatory system, 444-447, 460-468 .....	32	21	11	11.9	17.3	17.2
Influenza, 480-483 .....	5	2	3	1.9	2.3	0.4
Pneumonia, 490-493 .....	36	25	11	13.4	23.7	22.5
Bronchitis, 500-502 .....	2	2		0.7	1.5	0.4
Appendicitis, 550-553 .....	3	2	1	1.1	1.5	3.1
Intestinal obstruction and hernia, 560, 561, 570 .....	15	10	5	5.6	5.3	6.1
Gastro-enteritis and colitis (under 2) 571.0, 764 .....	23	2	21	8.5	13.5	7.6
Cirrhosis of liver, 581 .....	8	6	2	3.0	3.4	5.3
Diseases of pregnancy and childbirth, 640- 689 .....	11	4	7	13.8	22.4	9.6
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 681, 682, 684 .....	2	1	1	2.5	4.0	2.7
Congenital malforma- tions, 750-759 .....	29	20	9	3.7	3.3	3.6
Accidental deaths, total, 800-962 .....	127	91	36	47.2	72.3	58.8
Motor vehicle acci- dents, 810-835, 960 .....	53	45	8	19.7	27.5	26.0
All other defined causes .....	409	211	198	151.9	142.3	164.3
Ill-defined and un- known causes, 780- 793, 795 .....	116	42	74	43.1	48.6	39.7

Rates: birth and death rates per 1,000 population; infant deaths—per 1,000 live births; stillbirths per 1,000 deliveries; maternal deaths per 10,000 deliveries; deaths from specified causes per 100,000 population.

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BOOK ABSTRACTS AND REVIEWS

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**Holt Pediatrics.** By L. Emmett Holt, Jr., M. D., Professor of Pediatrics, New York University College of Medicine; Director, Children's Medical Service, Bellevue Hospital, New York; and Rustin McIntosh, M. D., Carpentier Professor of Pediatrics, Columbia University; Director of the Pediatric Service in the Babies Hospital, New York. Twelfth edition. Cloth. Price, \$15.00. Pp. 1485. New York: Appleton-Century-Crofts, Inc., 1953.

Holt Pediatrics is now available in the 12th edition, published this year. Having first made its appearance in 1896 this standard reference work has had wide acceptance not only in the United States but in many foreign languages. To have continued as one of the best pediatric texts for fifty-seven years should be recommendation enough for both publisher and authors and require little review.

Since only the general practitioner, unfortunately, is expected to know everything concerning all medical subjects this volume had 72 collaborating authors. By such a division of labor these authorities have done their best in the allotted space to produce a well-balanced and up-to-date edition in the pediatric field. Their task has not been easy. To produce a text suitable for the medical student, who wishes to read only the barest essentials, yet serve the needs of the general practitioner who desires a more complete discussion relative to the younger members of his practice, and still supply the pediatrician, completely puzzled by the patient sent to him by a kind colleague who has "run all of the tests and prescribed all the antibiotics," with just those kernels of information needed to establish a diagnosis or effect a cure is truly beyond the abilities of ordinary mortals. Even so, this volume comes very close to accomplishing such a feat.

The plan of Holt's Pediatrics begins with an excellent survey of those problems peculiar to childhood and especially in that almost completely neglected phase of growth: adolescence. Such studies as characteristics of mental and physical growth at various age levels, changing nutritional requirements of these stages of growth, as well as endocrine influences on development, peculiarities of disease in pediatric patients, discussion of the all-important subject of fluid and mineral balance of infants, immunology and other preventive aspects of child life and, finally, a discussion of basic problems in the treatment of pediatric illnesses form the first and perhaps most important division of the book. To this reviewer, these 97 pages are worth reading many times.

The 1336 remaining pages concern diseases and malformations based on an anatomic classification—eyes, alimentary tract, blood and blood forming organs, etc. Individual diseases receive, in general, full and authoritative discussion. In

an occasional instance the allotted space seems too much or too small. For example, 21 pages are devoted to a most excellent discussion of rickets whereas only 10 pages are given to poliomyelitis. As a minor criticism, and one shared by most medical texts, the illustrations and diagrams could be greatly improved, not so much in quality of printing but by the many recent psychologic and pedagogic advances in graphic arts.

In summary, this is an excellent source of pediatric information well worth the price of fifteen dollars. In fact, it is worth fifteen non-deductible income tax dollars and these days such a statement is practically complete endorsement of any product.

W. A. Daniel, Jr., M. D.

**The Nursing Mother.** By Frank Howard Richardson, M. D., F. A. C. P., F. A. A. P., Licentiate, American Board of Pediatrics. Cloth. Price, \$2.95. Pp. 204. New York: Prentice-Hall, Inc., 1953.

The Nursing Mother explains the advantages and satisfactions of breast feeding. Dr. Richardson draws his conclusion from long years of practice as a pediatrician and he highly recommends natural feeding as being superior to any form of artificial feeding. In a simple, concise manner he explains breast feeding as it affects both parents and the child. This book was written for the average mother and to allay doubt regarding the physical and emotional experience of breast feeding. It will also be of interest to nurses and doctors working in this field.

Information is offered to the mother to assist her in reaching a decision as to which method she will employ in feeding her baby. Although it is pointed out that breast feeding is best, the author recognizes that a few mothers have to use artificial feedings.

Dr. Richardson answers many questions regarding prenatal care and points out that much value is gained by association with other people who are going through the same experience. He recommends that every prospective mother and father be enrolled in a class for expectant parents.

The physical procedure of producing milk and the action of the infant in nursing are explained. Specific instructions are given for breast preparation and photographs are shown to illustrate several comfortable positions of holding the baby during the nursing period.

A brief discussion on natural childbirth and rooming-in is given. The expectant parent is informed, therefore prepared to make an intelligent choice regarding medical care. The role of the father in natural childbirth and the father's part in rooming-in are valuable features.

The last chapter, reviewing questions and answers, constitutes a ready reference for the ex-

pectant parent. Here Dr. Richardson reassures the parents that natural feeding gives the baby not only a better chance for physical health but also has undisputed emotional advantages.

Thelma N. Walker, R. N.

**Operative Surgery.** Edited by Guy W. Horsley, M. D., and Isaac A. Bigger, M. D., Medical College of Virginia, Richmond. Sixth edition. Two volumes. Cloth. Price, \$30.00. Pp. 1579, with 1274 illustrations. St. Louis: The C. V. Mosby Company, 1953.

This ambitious work covers in 1579 pages the operative technique of most of the common procedures in every field of surgery except the eye, ear, nose, and throat. The description of the many operations is most detailed and explicit, and reads like an informal discussion by a surgeon familiar with his field. All details are touched upon so that one, unversed in a given operation, should be able to gain a clear conception of the individual problem.

Adding much to the written text are the numerous illustrations by Miss Helen Lorraine. They are outstanding in that they are realistic and at the same time understandable.

The first edition of this book, published in 1921, was written by one man, Dr. J. Shelton Horsley, Sr., and with few exceptions described only operations which had been tried and found

satisfactory by him. It is a commentary on the broadening and resultant specialization in surgery over the past 30 years that the present edition has 20 contributors, all from the staff of the Medical College of Virginia. From this change in the picture of surgery arise the two principal shortcomings of the present work. As in the first edition, all operative procedures are those that have been used and found satisfactory by the authors and are admittedly not always the only approach to a given problem. Such didacticism undoubtedly has its place in surgical textbooks today. Nevertheless, in an era of a more critical, scientific approach to surgery, one feels the lack of any factual proof of the efficacy of the occasional rather controversial technique that is suggested. Secondly, the chapters on such broad subjects as surgical physiology or the cancer problem are necessarily rather general in scope and will probably seem rather brief and elementary to the average resident or practicing surgeon today.

Nevertheless, in few other works can one find such clearly presented and illustrated descriptions of most operative procedures in all fields of surgery, from neurosurgery to urology. For the man who wishes to have on his shelf a reference volume covering probably every operation that he will ever be called upon to do, this book is recommended.

T. Brannon Hubbard, Jr., M. D.

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## AMERICAN MEDICAL ASSOCIATION NEWS

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### URGES MORE AUTOPSIES BE PERFORMED IN CORONER'S CASES

More autopsies should be performed in coroner's cases to prevent errors and injustices in medicolegal investigations, in the opinion of Dr. Henry W. Turkel, coroner of San Francisco. He also stated that, in his opinion, a coroner should be a physician.

"Any case falling within the jurisdiction of medicolegal authority has, by definition, a very real element of doubt," Dr. Turkel wrote in the November 21 Journal of the American Medical Association. "It is doubtful that anyone, physician or not, can safely establish the cause of death in a medicolegal case without an autopsy, except in a relatively few instances.

"It should be apparent that any case doubtful enough to warrant a medicolegal investigation deserves an autopsy. Autopsy should always be done if there are legal grounds to authorize it. This view is held to assure that crimes or misadventure will not be overlooked and to make certain that any-

one who may now or later be suspected of having perpetrated a crime will not be falsely convicted because of inadequate investigation.

"If the state assumes the right to judge and punish persons for crimes or negligence, it has a far greater obligation to insure that no one is falsely or unjustly punished. No trouble or effort is too great to assure this last point, and no one can be so wise that he unfailingly arrives at a proper conclusion simply by deduction or inspection."

On the subject of coroners being physicians, Dr. Turkel said:

"While many lay coroners are doing a creditable job, a large proportion of the coroner's work, in addition to being supervisory, deals with medical matters. In most jurisdictions, it is best to have a common direction of medical, technical and investigative personnel in order to integrate their various activities. This could most easily be done by someone trained in the medical sciences.

"While all 'at the scene' investigations

need not, and perhaps should not be made by a physician, the work of the autopsy surgeon, toxicologist, pathologist and technician is better understood by a physician and thus better integrated into the investigation. For these reasons, the work should be overseen by a coroner who is a physician.

"It is often held that a lay coroner who is a good administrator can do an adequate job if he seeks and engages competent medical guidance. This is true, but, if one can find a physician who also is a good administrator, the approach is more direct and effective and, to be sure, more economical. It is mainly for these last reasons that a physician is recommended for the position of coroner."

Dr. Turkel added that juries often require guidance on medical matters, and it is a considerable advantage if a medical report is presented by a physician who can answer any questions or dispel any doubts as they arise in the minds of the jurors.

"Many cases heard at the inquest involve the testimony of physician witnesses who may have been in attendance before the death," he said. "It is important to have the questioning of the physician witness done by a physician in order to clarify issues and

to assure proper and comprehensible testimony."

Dr. Turkel recommended three other changes which should be instituted in many local coroner's systems:

1. The medical profession, through enlarged teaching programs in medical schools and through local county medical societies, should stimulate interest and encourage physicians to take active part in the coroners' offices and, when possible, to seek office.

2. Coroners and autopsy surgeons should be encouraged to use laboratory facilities more than they do now in medicolegal investigations.

3. Commensurate with the scientific and intellectual requirements of the office, salaries should be set that will attract men with optimum qualifications.

In an editorial in the same issue of The Journal, and reproduced in this Journal, it was reiterated that a coroner should be a physician. It also was pointed out that the "foremost requirement" of a competent coroner's or medical examiner's office is that the "office holder be professionally competent and, second, that he have both the authority and the facilities for the conduct of such investigations as are required in the interest of public welfare."

#### URGES SANITATION OF CRUSHED ICE

Because water-borne diseases may easily be spread by contaminated ice, ice used in drinks or in direct contact with food should conform bacteriologically to the accepted standards for potable water, it was stated editorially in the November 21 Journal of the American Medical Association.

WANTED: Physician for Alabama State Mental Institution—Salary \$6,000.00 to \$7,-800.00. Must be licensed. Write Dr. J. S. Tarwater, Superintendent The Bryce Hospital, Tuscaloosa, Alabama.



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# THE JOURNAL

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## FRACTURES IN CHILDREN

DAVID G. VESELY, M. D.  
CHESTLEY L. YELTON, M. D.

and

CHARLES H. WILSON, M. D.  
Birmingham, Alabama

Fractures in children differ in several respects from those which occur in adults. The heavy periosteum which surrounds the shafts of their long bones tends to prevent displacement and to make closed manipulations and reductions much easier. The rapid growth in remodeling of bones in children, especially those under six years of age, will convert a relatively poor position into an excellent end result. The rapid growth potential of those of the younger age groups results in early and speedy union in most fractures and nonunion is most unusual. Fractures adjacent to epiphyseal lines have a great stimulation on the adjacent epiphysis. Epiphyseal fractures in children can result in epiphyseal arrest in a small number of cases. Injuries to arteries and nerves are very unusual in fractures among the young. Fractures about the elbow, however, are fraught with extreme danger and, because of the frequency of supracondylar breaks, are the leading cause of Volkmann's paralysis in this area.

There are certain principles in the treatment of fractures in children which are of paramount importance. Alignment is the chief requirement in treating them. Apposition and length are of little significance, though desirable, according to Blount. Close observation on rotation should be observed in immobilization of the fractures. The simpler methods of conservative treatment, such as closed manipulation with application of plaster, or simple traction methods

with adhesive or skeletal traction, are preferred to more complicated methods. Open reduction is generally required in a very few predictable fractures, those about the elbow, and occasionally articular fractures.

*Fractures of the Femur:* Fractures of the femur in young patients from infancy up to five or six years are treated in Bryant's traction. Bilateral traction, with moleskin or double adhesive, is applied to both legs, and the patient suspended so that the buttocks just clear the bed. It is very important, in the application of Bryant's traction, that close observation be kept on the Achilles tendon and the dorsum of the foot. Disastrous sloughs of tissue in these areas have occurred in the past from lack of close observation of this type traction. As the child becomes older, five to six, we prefer the use of a Kirschner wire through the lower femoral condyles or upper tibial crest. Due care should be observed that the wire does not enter the epiphyseal plates in these areas. Alignment is the chief requirement in treatment of femoral fractures, and close apposition is desirable but not imperative. As a matter of fact, side to side union usually occurs in quicker time than end to end apposition. Blount has stated that it is desirable to have at least one centimeter of overriding in order to correct for future leg inequality due to stimulation of the fracture site by the fracture process itself.

Fractures of the distal femoral epiphysis occasionally require open reduction if they cannot be held in good position by closed reduction. Usually no metal fixation is required to hold, after these open reductions.

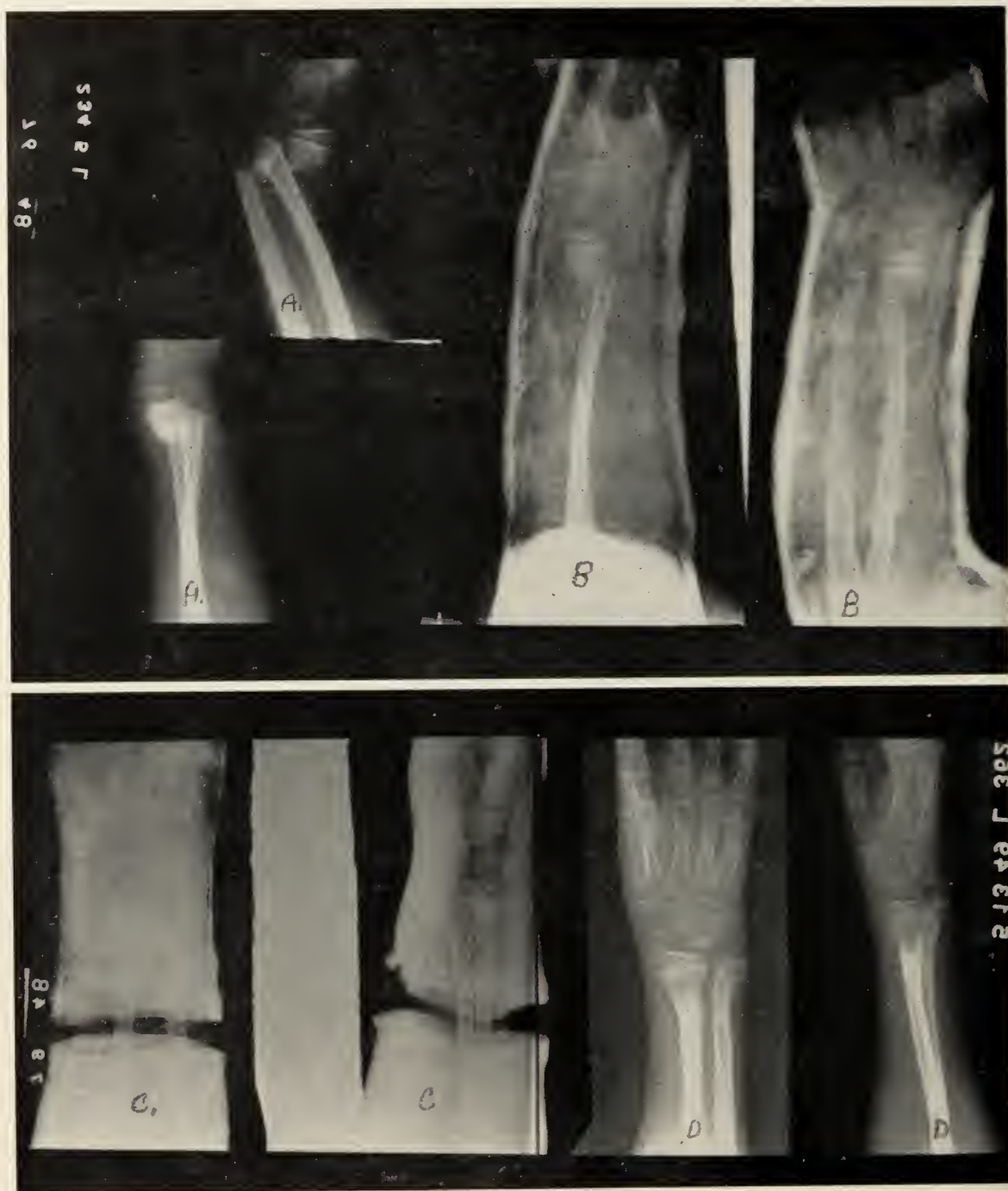


Fig. I

- A. Fracture of both radius and ulna elsewhere.  
 B. Position was considered unacceptable.  
 C. The manipulator sectioned the cast in a circular manner and secured no change. The parents stated that the child cried for three

weeks and then had no more pain. Advanced Volkmann's paralysis was present.

D. All supports were removed. The catastrophic paradox of an excellent healing of the fractures with all the sequelae of Volkmann's paralysis is a hard lesson.

Fractures of the neck of the femur are best treated by conservative measures such as closed manipulation and application of a one and one-half body spica or skeletal traction. Open reduction and internal fixation with Smith-Petersen nails have been asso-

ciated with an unusual number of nonunions and high incidence of aseptic necrosis of the head of the femur. It has been postulated that this is due to the lack of blood supply from the torn ligamentum teres to the capitus of the femur.

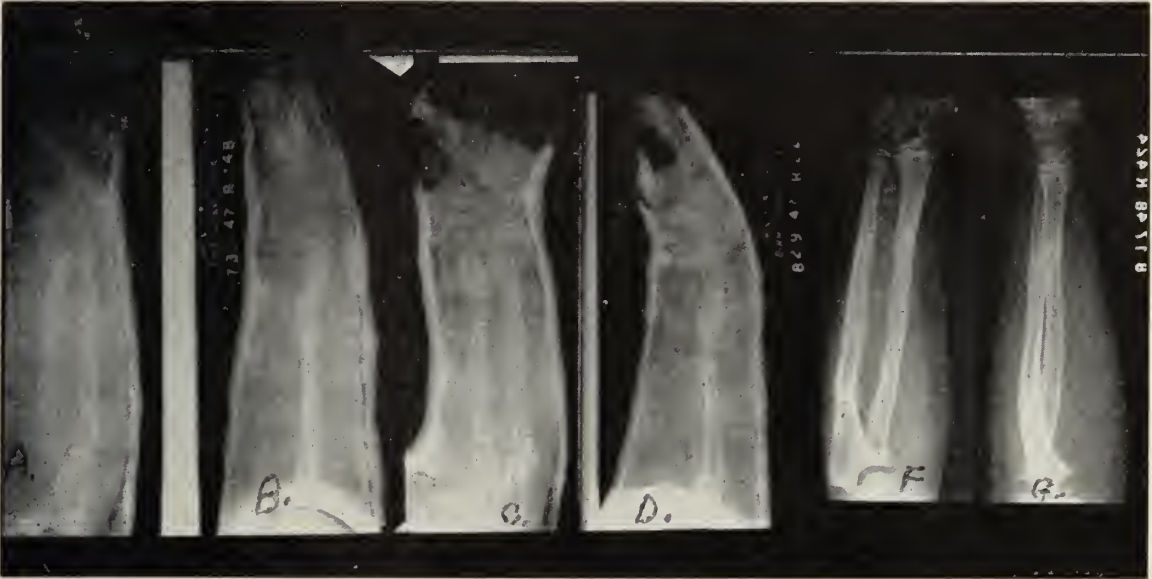


Fig. II

A-B. Fractures of the radius in the lower one-third and ulna at two levels, twelve year old male.

C-D. Position is nil, but alignment and length

*Tibial Fractures:* Fractures of the tibial plateau are unusual in children. The most frequent fracture seen is that of a spiral fracture of the mid-third of the tibia without involvement of the fibula itself. These,

are acceptable. Early fiber bone is seen even in plaster.

F-G. Twelve and one-half months later, healing was complete. Length alignment and position without rotation had been achieved.

together with transverse fractures of the tibia without fibular involvement, constitute the general run of tibial fractures in this age group. Treatment consists of closed manipulation and application of a long



Fig. III

Bryant's Traction. Note: Foot pieces, no circular adhesive, malleolar pads. Buttocks pulled clear of bed. Bilateral traction, even though only one femur is fractured.



Fig. IV

Dunlop's Traction. Note: Upper extremity freely supported. "Hand cage" to insure free finger motion. Light arm countertraction.



Fig. V

Completely displaced supracondylar humeral fracture in eight year old female, with cerebral palsy, spastic type, 24 hours old, treated in Dunlop traction. No circulatory trouble. Poor position but good alignment.

plaster cast from the toes to the groin. Fractures about the lower tibial epiphysis are likewise dangerous as the frequent sequela is that of epiphyseal arrest of the medial side. Later, overgrowth of the lateral side tends to produce a varus ankle. Close observation should be kept on all fractures of the lower tibial epiphysis for epiphyseal arrest.

**Fractures of the Foot:** Fractures of the foot in children are usually due to direct trauma and from falling objects. The treatment is that of manipulation under anesthesia to produce a normal looking foot clinically. A short boot cast is applied for three weeks and then ambulation is allowed. Rarely, traction may be necessary to hold dislocation of the midtarsus. Open reduction is almost never indicated.

**Fractures of the Pelvis:** Fractures of the pelvis are usually secondary to automobile



Fig. VII

Still missing! The lateral condyle has healed well in six months.



Fig. VI

A dislocated elbow, seven year old female. What is missing?

accidents or other direct violence and are treated by recumbency in bed. Where dislocation of the sacroiliac joint has occurred, appropriate treatment with pelvic sling is indicated.

**Fractures of the Spine:** Fractures of the spine occur rarely in children because of the large cartilaginous component in this area.

**Fractures of the Upper Extremity:** Fracture of the clavicle usually occurs at the junction of the middle and outer thirds where the stress of the double curve of the clavicle is greatest. It is unusual for any artery or nerve damage to take place in this area in children. The subclavius muscle offers adequate protection to the subclavian artery. Open reduction is never indicated unless there are vascular or brachial plexus



Fig. VIII

Fourteen months following the fracture, the medial epicondyle is still incarcerated in the joint where it is now a bone block. The medial epicondyle is present in children as a separate epiphysis from seven years to seventeen years when it fuses with the medial condyle.

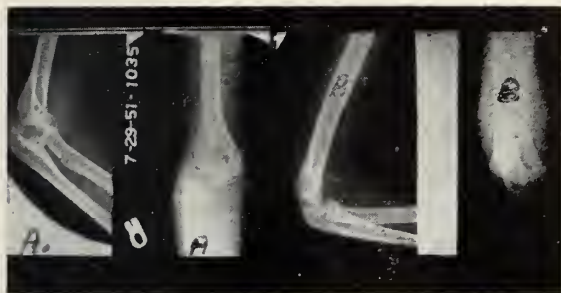


Fig. IX

A. Fracture dislocation of the elbow with the medial epicondyle in the joint.

B. Closed reduction, with the forearm in pronation, resulted in complete reposition.

complications. The only results from open reduction of the clavicle in children are malunion, nonunion and infection. Appropriate treatment is accomplished by figure-of-eight bandages of any particular material desired by the surgeon; an ace bandage, stockinette figure-of-eight bandage, and plaster figure-of-eight have all been used. It is well to give the patient a sling to ease the motion of the affected extremity.

Fractures of the humerus occur in this frequency: 1. the condylar region, 2. the subtubercular region, and 3. the upper epiphyseal region. It is rare to see a fracture of the mid-third of the shaft of the humerus in children. Overriding is not desirable in these fractures but will result in a final union in good position if alignment is held with a hanging cast. Undisplaced fractures of the upper shaft of the humerus can be treated with a plaster Velpeau or a light hanging cast. Fractures of the subtubercular region are usually treated with a light hanging cast, the elbow being at right angles to insure anatomic line-up of the fracture itself. It is rare to have any artery or nerve damage as a result of humeral fractures. Supracondylar fractures of the humerus in young people are usually due to a hyperextension injury with the fall backwards on the outstretched hand. If these supracondylar fractures are seen early, closed manipulation, with the elbow in flexion and the forearm in pronation, is pursued. If these fractures are seen late, with alarming swelling about the elbow, Dunlop traction is applied. This traction is simply one of adhesive tape with the elbow at about 150 degrees, the hand elevated in the adhesive traction. Dunlop traction is usually applied for a period of about three weeks, and then the elbow is placed at right angles in a plaster cast.

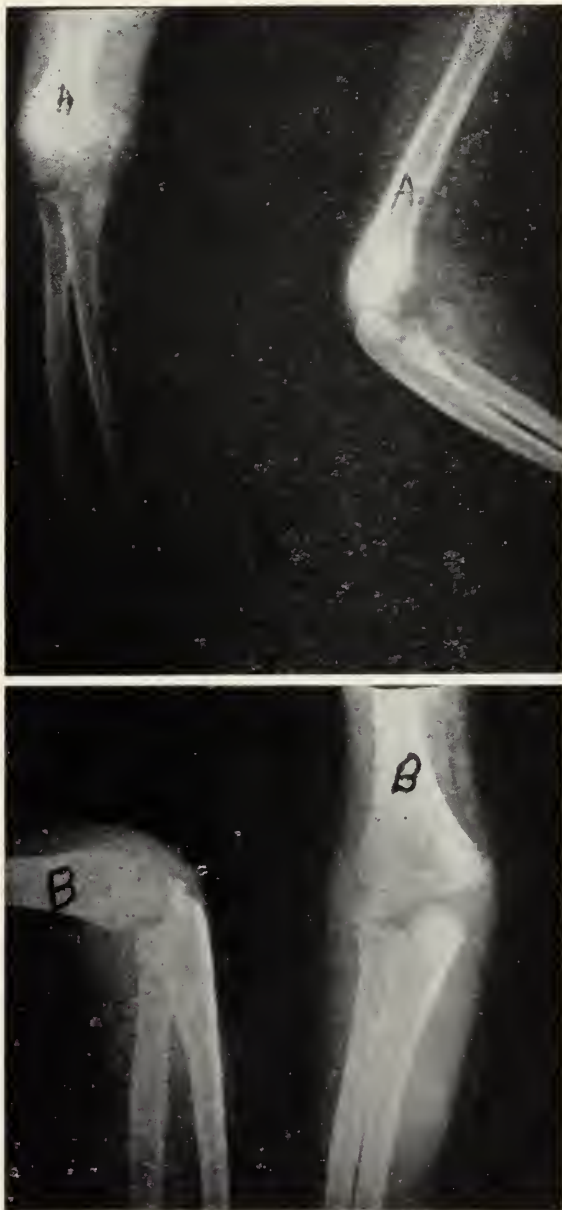


Fig. X

A. Supracondylar humerus with bone in good position. Forceful manipulations, by the clock, had created a huge myositis ossificans, with only 15° tearful motion.

B. Treatment, complete, indifference, no passive pump-handling. Six months later free painless motion 45°-180°.

The complications of supracondylar fractures in children are many. The most dreaded of these is Volkmann's contracture. It can be avoided by a prompt and early reduction. If the radial pulse is present this is desirable and it should not be obliterated by manipulation. In the absence of radial pulse, if a capillary pulse can be ascertained in the fingers, and there is no pain on extension of the fingers, the cast can be retained.



Fig. XI

End result of lateral condyle fracture, untreated. Only slight loss of flexion, 25° loss. Complete extension, cubitus varus is marked. Such "gunstock" elbows are serviceable though cosmetically poor trade marks.

The most important early sign of Volkmann's contracture is that of pain on extension of the fingers. If this is present all circular dressing should be removed and the patient placed in Dunlop traction, with the elbow at about 150° flexion. A combination of pain in the hand, swelling, coldness, cyanosis and loss of power of the fingers is indeed cause for alarm, and the circular dressing should be removed immediately and sympathetic block performed on the upper sympathetic ganglia. If there is no response from these measures within a period of two to three hours, fasciotomy in the antecubital fossa is indicated. It is unusual for a child to require more sedation than that of aspirin following closed manipulation and immobilization in plaster. When much pain is complained of, suspicion should

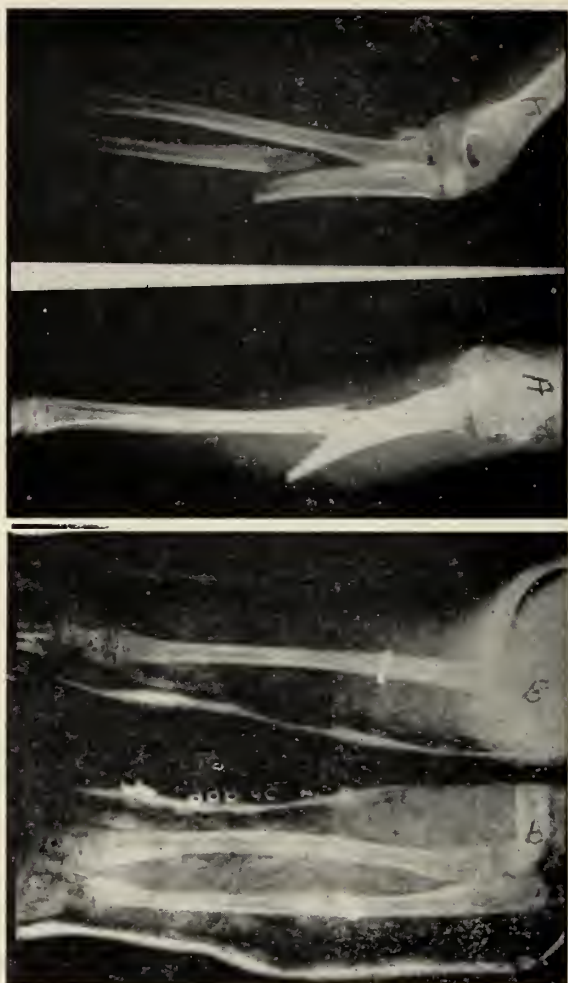


Fig. XII

A. Monteggia type, pronation, injury, with oblique fracture of ulna, and complete dislocation fracture upper radial head epiphysis. Open reduction of ulna, with closed manipulation of radial head, resulted in B.

be entertained of constricting bandages and Volkmann's contracture.

Fractures of the lateral condyle of the humerus, if undisplaced, usually require only the application of a long arm cast. However, if there is displacement of the fracture, rotation of the fragment may take place. Such rotation and malposition are indications for open reduction. Usually this lateral humeral condyle can be fixed in place with a small suture of absorbable or nonabsorbable material. The use of metal fixation should not be encouraged, although insertion of a small Kirschner wire is well tolerated in this area. If this fracture is not reduced and held by the closed method, or open reduction performed, malunion and nonunion may take place with subsequent delayed ulnar palsy. It is, therefore, advocated that open reduc-

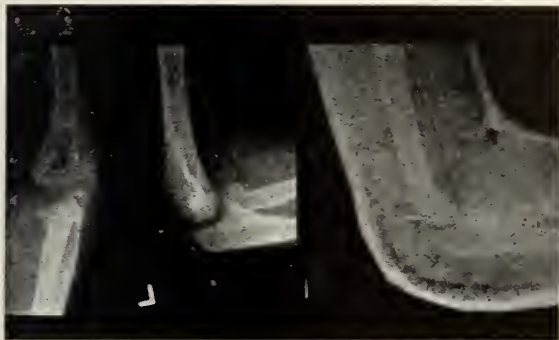


Fig. XIII

Complete dislocation fracture radial head with open reduction and intramedullary fixation.

tion be pursued immediately if satisfactory reduction is not achieved in lateral humeral condylar fractures in children.

Watson-Jones has said that in any child between the ages of seven and seventeen a suspicion of fracture of the medial epicondyle should be entertained when the patient complains of fall with pain in the elbow. The bulk of these medial epicondylar fractures can be replaced simply by flexing the elbow with the hand in pronation. Occasionally, however, the flexor tendons pull this small epicondylar fragment into the elbow joint itself and open reduction is necessary. If open reduction is done, fixation with a small suture can be achieved at the time of operation. Fractures of the lower extremities of the humerus usually heal well in a period of six weeks and this is the arbitrary limit for immobilization. Younger children may require somewhat less time for healing but we feel that application and wearing of a plaster cast for the six week period is good insurance against early re-fracture.

Fractures of the neck of the radius can usually be managed by closed manipulation, if there is less than a  $45^\circ$  angulation of the neck of the radius. However, where the angulation is more than  $45^\circ$  and closed manipulation does not result in satisfactory positioning or, if the epiphysis itself is completely displaced from the neck of the radius, open reduction may be necessary. The elbow is approached from the lateral side, due care being taken to avoid the radial nerve and the interosseous branch of the radial nerve, and the epiphysis simply placed back on the neck of the radius. Internal fixation in the form of an intramedullary wire may be necessary or a simple suture with absorbable material. Fractures



Fig. XIV

Isolated radial head dislocation, four weeks old. Required open reduction.

of the olecranon are rare in children and usually require only immobilization in slight extension if there is much displacement. If there is no displacement of the fracture, immobilization, with the elbow at a right angle, is instituted. Monteggia's fracture, a dislocation of the radial head with fracture of the upper third of the radius, is rare in this age group. Closed manipulation should, of course, be attempted. If closed manipulation cannot be accomplished successfully, open reduction of the ulna, with intramedullary nail fixation, usually results in adequate fixation of the dislocation of the radial head itself. Forearm fractures in children vary in frequency, those of the distal third being most frequently seen, mid-third next in frequency, and the proximal third the least frequent. Open reduction is never indicated in forearm fractures up to the age of ten or twelve years. Closed manipulation usually results in good alignment and length, position usually being taken care of by the very adequate growth potential of these children.

Greenstick fractures of both bones of the forearm are quite frequent in the young and should be cautiously manipulated and held in position. The deformity can recur unless due care is taken in application of the cast or unless the greenstick itself is completely refractured. The completion of a greenstick fracture should be very cautiously done as the fracture may be displaced completely. Angulation should certainly be watched for in fractures of the forearm in children. Fractures of the proximal third of the radial shaft are very troublesome to hold by closed manipulation. Very rarely in the older age



Fig. XV

Fracture dislocation, lower radial epiphysis with closed reduction. Check x-ray twenty-four days later, out of plaster which was worn three weeks additional.

group (12-15) open reduction may be necessary. In the younger age group, closed manipulation, with the best position that can be obtained, usually results in a satisfactory return of function to the forearm. Frequent x-ray checks of forearm fractures should be made for the first two or three weeks so that any slipping of the fracture can be observed. Fortunately fractures of the mid-third of the radius in the younger age group are usually greenstick and good results can be obtained with closed manipulation and application of a long arm cast. Fractures of the distal radial epiphysis should be reduced immediately if there is any displacement. Minor displacements need only the application of a long arm cast. Fractures of both bones of the forearm in the lower one-third are often difficult to reduce. The principle of angulation and flexion usually results in apposition of the radius at least. It is felt that if radial apposition of any portion can be gotten the length and

alignment of the wrist will be preserved and a satisfactory result occur. Carpal fractures and dislocations are very unusual in children. The methods of closed manipulation and application of a short arm cast are the treatment of choice.

Metacarpal fractures are quite frequent among young. Displacement is usually minimal, and application of a glove cast extending to the mid-forearm, with the metacarpophalangeal joint flexed and the involved finger immobilized, will result in satisfactory position and union in these fractures. Fracture dislocations of the metacarpophalangeal joints occur occasionally and closed manipulation may be a failure. After one or two attempts at closed manipulation under general anesthesia the dislocation should be openly reduced.

*Fractures in the Newborn:* The three most important fractures occurring in the newborn, in order of frequency, are clavicular, humeral and femoral. Fractures of the femur occur occasionally in breech deliveries. Those of the humerus occur in cephalic delivery where an elbow is caught under the brim of the pelvis between the bony pelvis of the mother and the neck of the child. Fractures of the femur in the newborn can be treated by portable Bryant's traction, which is successful and makes for easy nursing. A forest of callus is usually laid down in a period of seven to ten days. In fractures of the humerus in the newborn, the arm is simply bandaged to the side of the elbow at right angles, the union is quick and voluminous in this area. Fractures of the clavicle in newborns are almost impossible to immobilize in any manner. A small adhesive tape dressing applied to the humerus and clavicle on the involved side is that of "window dressing" only.

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Isoniazid is unquestionably a very potent drug, but the striking degree of immediate improvement which follows the use of this agent is not a measure of its worth in the treatment of tuberculosis. It should not be forgotten that, in tuberculosis, antibacterial agents, at best, enhance natural processes of healing. Sooner or later the tubercle bacillus acquires resistance, and the disease resumes its preordained course, depending on factors beyond the reach of therapeutic weapons.—Eli H. Rubin, M. D., *New York State J. Med.*, June 15, 1953.

## THE EARLY DIAGNOSIS OF GASTROINTESTINAL CANCER

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### I. INTRODUCTION:

The principles of early diagnosis in intestinal cancer have been presented so repeatedly that most axioms have attained the stature of platitudes. Only the stomach and colon will be discussed, since these are the most frequent sites of intestinal cancer, and also the most amenable to cure. Moreover, certain facets of the problem, such as the relationship of gastric ulcer, benign polyps, and the great majority of symptoms and signs, will not be covered.

It is probable that the operative procedures used today for these cancers have reached the limits of radicalness and that further conquest of the disease, in the absence of a better means of cure, will depend upon earlier diagnosis. Since many of these cancers have metastasized before they cause symptoms, the diagnostic problem must be considered under two headings, prophylactic diagnosis in the "healthy" individual and therapeutic diagnosis in the symptomatic patient.

### II. DIAGNOSTIC METHODS:

A. *The Stomach:* X-ray and gastroscopy are today the accepted methods for diagnosing gastric lesions. X-ray is the more generally feasible both because it is more acceptable to the patient and because there is a relatively large number of radiologists able to carry out the procedure. It should be emphasized that neither x-ray nor gastroscopy is infallible, and that both are completely dependent on the ability and perspicuity of the examining doctor. Moreover, negative findings by no means rule out a lesion, and if the latter is suspected, the examination should be repeated. Baker et al., in a series of 106 cases of proved stomach cancer, reported 58 per cent correct diagnoses on the first x-ray examination, increased to 68 per cent by repeat examination. A correct diagnosis was made by gastroscopy in 70 per cent of cases at the first examination, increased to 73 per cent on re-examination. That these two methods should be considered complementary and not considered as rivals is shown by the fact that, utilizing both x-ray and gastroscopy, the

correct diagnosis was made in 91 per cent of cases.<sup>1</sup>

This increased efficacy of the combined examinations, borne out by other reports in the literature, is full justification for much more widespread use of gastroscopy than is the rule today.

More recently the use of the gastric smear is receiving careful consideration as a diagnostic tool. Strangely enough, this method was first described by Marini<sup>2</sup> over forty years ago, who diagnosed 32 of 37 carcinomas by examination of unstained cells. Real impetus was only given to the method, however, with the development of the gastric abrasive balloon.<sup>3</sup> By means of the latter much more adequate specimens are obtained, and the Papanicolaou staining technique has given clear cellular detail. In a recent series of 154 cases, Papanicolaou et al.<sup>4</sup> diagnosed correctly 30 of 32 proven carcinomas, and there was only one false positive, a better record than that achieved by the radiologists in the same series. Unfortunately, good results depend completely upon the rather remarkable ability of the examining cytologist. The method must await the test of time, and for it to prove generally practicable more efficient methods of screening normal smears must be developed, and more men versed and interested in the technique of cytodiagnosis must be trained. Nevertheless, for the gastric smear to be developed into as practical a procedure as the cervical smear does not seem to be too improbable a hope.

B. *The Colon:* The three proven methods for diagnosing colon cancer are the examin-

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2. Marini, G.: Über die Diagnose des Magen-karzinoms auf Grund der Cytologischen Untersuchungen des Spielwassers, *Arch. f. Verdauungs-krankh.* 15: 251, 1909.

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4. Papanicolaou, G. N., quoted by Rubin, C. E.; Palmer, W. L., and Kirsner, T. B.: The Present Status of Exfoliative Cytology in the Diagnosis of Gastrointestinal Malignancy, *Gastroenterology* 21: 1-11, 1952.

ing finger on rectal examination, the sigmoidoscope, and the barium enema by x-ray.

The finger, reaching 8 or 9 cm., and the sigmoidoscope, reaching to 25 cm., together cover the area occupied by approximately 70 per cent of colon cancers. The rest of the colon, covered by x-ray, is worthy of mention for two reasons. Small polypoid lesions often can only be picked up by the air contrast examination, and often the latter is ineffective unless the patient is well prepared by means of both castor oil and enemas. Secondly, due to the redundancy of the sigmoid colon, small lesions in this area are often missed by x-ray and can only be found by means of the sigmoidoscope. No colon examination is complete unless sigmoidoscopy has been done.

III. DIAGNOSIS IN THE ASYMPTOMATIC INDIVIDUAL:

It is thought by many that cancer of the stomach is practically incurable today. As a matter of fact, a number of clinics report 5-year survival rates of 50 per cent in those cases without lymph node metastases. Unfortunately, however, less than 20 per cent of gastric cancers are without metastases when they come to operation through the usual channels. It is for this reason that a feasible method of examining the entire "healthy" population is much to be sought after. Although the picture is less discouraging in colon cancers, many of these tumors have also metastasized before they have made their presence known symptomatically.

In 1948 a Cancer Detection Center was organized at the University of Minnesota, in which emphasis was placed upon the diagnosis of gastrointestinal cancers.<sup>5</sup> Forty three hundred fifty two (4,352) apparently healthy individuals, over the age of 45 years, were examined and most were reexamined at yearly intervals. X-rays of the stomach after barium meal were taken only of certain individuals (Table I). All patients were proctoscoped and certain ones had barium enema x-rays (Table II). Ten stomach cancers and nineteen colon and rectal cancers were found.

The results are shown in Tables III and IV. As seen in the tables, preliminary anal-

ysis has shown that more fruitful results could have been achieved with more stringent indications for x-ray examination. Such calculations are obviously not significant statistically, since we are dealing with such small numbers. However, they are suggestive of the type of fruitful analysis

(a) Individuals with histamine achlorhydria and hypochlorhydria (less than 30 degrees of free acid).
(b) Patients with occult blood in the stool.
(c) Patients with a strong family history of gastric carcinoma.
(d) Patients with an unexplained hemoglobin level below 11.5 grams.
(e) Patients with vague symptoms of gastric pathology which in any sense could be interpreted as being due to gastric carcinoma by the examining physician.

Table I  
The Indications for Stomach X-Rays with a Barium Meal. Cancer Detection Center, University of Minnesota.

(a) Patients with abnormal findings on proctoscopic examination.
(b) Patients with occult blood in the stool.
(c) Patients with an unexplained hemoglobin level below 11.5 grams.
(d) Patients with a family history of large bowel malignancy.
(e) Patients who have vague symptoms that could possibly be conceived as being due to malignancy of the large bowel by the examining physician.

Table II  
The Indications for Barium Enema X-Rays. Cancer Detection Center, University of Minnesota.

	X-Rays of Patients Over 45 Years and For All 5 Indications	X-Rays Only of Patients Over 55 Years with 0°-30° Free Acid
Incidence of Stomach Cancers Detected in Patients X-Rayed	1 cancer per 300 patients	1 cancer per 94 patients

Table III  
The Results of Stomach X-Rays on 2,881 Patients.

Cancer Detection Center, University of Minnesota; 4,352 patients examined.

5. Hubbard, T. B., Jr., and State, D.: Cancer Detection, Report from the Center at the University of Minnesota, Minn. Med. 35: 925-929, 1952.

	X-Rays for All 5 Indications	X-Rays Only on Patients with Abnormal Sigmoido- scopic Findings or with Occult Blood
Incidence of Colon Cancers Detected Above Reach of Sigmoido- scope	1 cancer per 219 patients x-rayed	1 cancer per 91 patients x-rayed

Table IV

The Results of Barium Enema X-Rays on 1,711 Patients.

Cancer Detection Center, University of Minnesota; 4,352 patients examined.

that might some day come from such a study.

The value of sigmoidoscopic examination is shown by the fact that benign rectal polyps were found in one out of eight examinations. Also seventeen of the total nineteen colon and rectal cancers were found directly or indirectly by sigmoidoscopy.

That such a program is worth while for the individual patient is shown by the fact that 50 per cent of the stomach cancers and 83 per cent of the colon cancers were early without metastases. However, the personnel and money required for such a center make it unfeasible today for the population at large, since approximately 30 per cent of the population in this age group have less than 30° of free acid. Proctoscopy alone is also not applicable as a widespread screening procedure. Such screening programs must await the development of better methods of selecting that patient who is susceptible to gastric or colonic cancer, or else of better and simpler diagnostic tests. At the present time the gastric smear technique seems to offer the most hope in this regard, but as yet is far too time consuming for application to the population at large.

IV. DIAGNOSIS IN THE SYMPTOMATIC PATIENT:

The early symptoms and signs of the small gastric or colonic cancer are known to us all. A reiteration of them here would be superfluous. Moreover, when one leaves the realms of theory and begins to carry out practical medicine, it is seldom feasible to examine the intestinal tract thoroughly in every patient presenting one of the myriad symptoms under which these cancers can masquerade in their early stages.

There is one clinical finding which is of sufficient import to warrant intense investigation, however. This is the presence of a definite anemia or of gross gastrointestinal bleeding. These signs, although known to be frequent harbingers of such cancers statistically, can be more vividly described by means of case reports, depicting also the numerous pitfalls which one may encounter.

Case No. 1. Mrs. A. J.: This 70-year-old white woman was first seen at the University of Minnesota Hospitals in August 1947. A note from her referring physician reads as follows: "Patient complained of weakness. Hemoglobin 8.5 grams. Diagnosis, pernicious anemia. Has had 7 weekly injections of liver. Due to lack of clinical response I feel patient probably has a malignancy."

An x-ray of the stomach revealed a definite polypoid carcinoma involving the body of the stomach near the fundus. Unfortunately, the patient then began to feel stronger, gained weight, had never had any digestive symptoms, and she refused to return for operation. Her physician concurred with her on this decision, and they both refused numerous supplications and prognostic threats over the next three years. Finally, three years after the x-rays had showed a cancer, the patient abruptly became obstructed and died a few weeks later of gastric cancer.

This case demonstrates strikingly the fact that a gastric cancer can be present for many months without giving obstructive or gastrointestinal symptoms. Secondly, it demonstrates the unreliability of response to hematinic therapy as a means of ruling out cancer.

Case No. 2. Mr. A. B.: This 67-year-old white male was admitted to the University of Minnesota Hospitals in April 1952. A letter from his physician reads as follows: "This man was first seen on 1-9-52 with a 30-pound weight loss, weakness, and shortness of breath. No indigestion or sour stomach. Hemoglobin 38%; 3.3 million red blood cells. He was treated with Reticulen and B<sub>12</sub> until 3-18-52. There is some nervous element of worry and anxiety, and he has been a very hard patient to care for. Hemoglobin responded well to B<sub>12</sub> and Reticulen. X-ray of the stomach and colon was negative on 2-7-52 except for aerophagia."

X-rays taken by us on April 28, 1952 revealed infiltration and immobility of the

entire lesser curvature of the stomach. At operation on 5-6-52 an extensive infiltrating carcinoma was found involving the entire stomach and the pancreas. A radical excision, including total gastrectomy and pancreatectomy, was performed. However, the patient died four months later with diffuse peritoneal metastases.

This case demonstrates, first, that not only is the stomach x-ray dependent upon how it is interpreted (it is unlikely that so much change had occurred in two months) but also that a negative x-ray should be repeated in the presence of definite symptoms. Secondly, the radical operation with the short survival is evidence of the fact that increased cure rates of gastric cancer in the future will depend upon big operations for the little cancers, extensive procedures for late cancers being almost always merely palliative procedures. Again, as in the first case, a severe anemia was treated without first arriving at a diagnosis.

*Case No. 3. Miss A. B.:* This 76-year-old white woman was treated for a fairly severe anemia from June to November of 1952. Treatment consisted of iron, liver, and transfusions. No x-rays were taken. When seen by us in November, she had responded well to this treatment, and her hemoglobin was 12 grams. However, a barium enema (11-11-52) showed a small filling defect in the cecum. On 11-21-52, a right colectomy was performed. Pathological examination revealed a carcinoma of the cecum, measuring 5.0 cm. in its greatest diameter. There were no lymph node metastases. At the present time she is asymptomatic and is gaining weight.

Again we see an anemia, secondary to cancer, apparently responding to antianemic therapy. Again the symptom of anemia was treated without a search being made for the cause.

*Case No. 4. Miss A. T.:* This 77-year-old white woman was admitted to the hospital in February 1953. She gave a story of fever and chills for 8 weeks, with occasional clots of dark blood being passed by rectum for 5 weeks. There had been no constipation or diarrhea. She brought with her x-rays taken elsewhere, and previously diagnosed as diverticulitis. These films showed diverticula but also a well visualized carcinoma of the transverse colon. Shortly after admission she began to bleed massively and a large, ulcerating carcinoma of the trans-

verse colon was resected as an emergency. Diverticula present in the left colon showed no evidence of inflammation or bleeding. When last seen, one month postoperatively, she was asymptomatic.

This case demonstrates that in gastrointestinal bleeding of the adult we must always assume that it is caused by a cancer until the latter is completely ruled out. Here also is an example of the fact that the worth of any x-ray depends on the way in which it is interpreted.

*Case No. 5. Mr. W. S.:* This 64-year-old white male was seen on October 7, 1952, with the story that he had noticed occasional bright red blood after straining at stool for the past year. There had been no change in bowel habits, but he had had a hemorrhoidectomy eight years before and this bleeding had been attributed to recurrence of the latter. The patient was told to prepare himself with enemas and to return for sigmoidoscopy. The latter was carried out four days later, and at 27 cm. a small polyp was seen and biopsied. This proved to be a cancer under the microscope. Barium enema with air contrast revealed no polyps or cancers. A left colectomy was carried out, with an uneventful postoperative course to date. There were no lymph node metastases, and this man's chance of cure is excellent.

Here is demonstrated again the axiom that the presence of diverticula or hemorrhoids should not divert one from ruling out carcinoma in intestinal bleeding. Also the case shows the fallibility of x-ray and the indispensability of sigmoidoscopy for the detection of small lesions in the sigmoid colon.

#### V. DISCUSSION:

Cancer of the gastrointestinal tract is responsible for more than 40 per cent of cancer deaths today. In spite of the fact that many of these cancers have been present for some time before the patient is seen by a doctor, this is no reason to pass off lightly an additional delay of several months. These may be the crucial months in which metastases occur; and if we are to decrease the death rate from this disease, we must use, as well as possible, those diagnostic tools available, at least until better ones are found.

The diagnostic errors in the above five cases may seem somewhat glaring in hindsight. However, they were made by capa-

ble, conscientious men, and there is no doubt that such courses of action are followed by many busy practitioners today. It may not be feasible to x-ray every patient immediately who presents the vaguest abdominal complaint. Nevertheless, I believe the following point of view should be practicable in most situations:

Anemia is not a disease but a symptom, and in any adult should be considered a symptom of gastrointestinal malignancy until proven otherwise.\* As such, it may exist for many months before definite gastrointestinal symptoms appear. Therefore, *any anemia that is severe enough to warrant therapy with liver, iron and hematinics warrants first a thorough investigation of the entire gastrointestinal tract.* This should

\*Even in pernicious anemia, the incidence of gastric cancer has been found to be as high as 12.3 per cent; so these patients should, themselves, have routine periodic stomach x-rays.<sup>6</sup>

6. Kaplan, H. S., and Rigler, L. G.: Pernicious Anemia and Carcinoma of the Stomach: Autopsy Studies Covering Their Interrelationship, *Am. J. M. Sc.* 209: 339-348, 1945.

include stomach x-rays, colon x-rays, sigmoidoscopy, and gastroscopy where possible. At all times it should be remembered that these diagnostic tools are fallible, and, if all are negative at the first examinations, they should be repeated.

Furthermore, response to energetic hematinic therapy does not rule out a small cancer which is bleeding chronically in minute degrees.

The same principles should apply, of course, to gross bleeding, with or without anemia. Nor should one allow the presence of hemorrhoids, diverticula, et cetera, to detract one from completely ruling out malignancy.

#### VI. SUMMARY:

1. The diagnostic tools available for the detection of intestinal cancer have been discussed.

2. Diagnosis in the asymptomatic and symptomatic patient has been reviewed; and, in regard to the latter, anemia or bleeding as early symptoms have been emphasized.

## HOOKWORM IN ALABAMA

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Alabama has, through past years, devoted time and effort to the diagnosis and prevention of hookworm. The last survey of any note was completed in 1937, when more than 250,000 children were examined.<sup>1</sup> This was statewide. It was only in the southern areas of the state that extensive hookworm was found, the northern counties showing a much lower figure. Since laboratory personnel was limited, it was felt that only the southern part could be resurveyed and invitations were, therefore, extended to some nineteen counties to participate. The number of people examined, the geographic area of the county to be included, and the inclusion or exclusion of Negro or white schools were left entirely to the discretion of the

local health officer. During the school year 1951-1952 thirteen counties participated in this hookworm survey with varying degrees of completeness, the number of tests performed being in excess of 40,000. Since the primary purpose of the examination was to detect hookworm, the Willis salt flotation method was used as in the 1937 survey.<sup>2</sup> No ova counts were made. However, other helminths were reported when found.

#### HOOKWORM

In Table I is presented a summary of the total results of the survey by county, race, and breakdown of positives of all types of infestation. It will be noted that out of the 40,845 examinations 7,335 were positive for one or more helminth infestations.

From the Bureau of Laboratories, State Department of Health.

1. Smith, W. H. Y.; Gill, D. G., and McAlpine, James: Intestinal Parasite Survey in Alabama, *South. M. J.* 32: 1094, 1939.

2. Willis, H. H.: Simple Levitation Method for the Detection of Hookworm Ova, *M. J. Australia*, 2: 375 (Oct.) 1921.

TABLE I  
SUMMARY OF 1951-52 SURVEY

County	Speci- mens	Positive	Negative	Unsat.	Breakdown of Positives					Breakdown of Mixed Positives						
					H. W.	Enter- obius	Asc.	H. nana	Trich.	Mixed	H. W. Trich.	H. W. En- terobius	H. W. H. nana	H. W. Asc.	Trich. Asc.	
Covington	4101	1114	2856	131	108	15	4			2	10		8	1	1	
	(C) 421 (W) 3680	61 1053	330 2526	30 101	55 1028	1 14	3 1				2 8		8	1	1	
Pike	4506	842	3521	143	820	10	4	1	3	4			4			
	(C) 2361 (W) 2145	267 575	1997 1524	97 46	261 559		4	1 1	1 2				4			
Escambia	3390	411	2850	129	344	15	47	1		4			4			
	(C) 555 (W) 2835	42 369	481 2369	32 97	12 332		29 18	1 1					4			
Choctaw	2609	389	2050	170	377	7	2	2		1			1			
	(C) 1908 (W) 701	126 263	1643 407	139 31	122 255	2 5		2			1		1			
Henry	3696	494	2921	281	475	8		2	1	8		1	3	3	1	
	(C) 1814 (W) 1882	162 332	1488 1433	164 117	155 320	1 7		2		4 1		1	3	2	1	
Conecuh	1988	304	1598	86	276	1	20			7					7	
	(C) 1322 (W) 666	185 119	1083 515	54 32	162 114		16 4			7 7					7	
Houston	8663	1433	6489	741	1395	29	3		3	3			3			
	(C) 2397 (W) 6266	204 1229	1857 4632	336 405	199 1196	2 27	1 2		2 1		3		3			
Washington	2543	612	1796	135	560	5	32	2		13		3		10		
	(C) 1195 (W) 1348	157 455	980 816	58 77	117 443	1 4	31 1			8 5			3	8	2	
Butler	1403	213	1089	101	202	6	4		1							
	(C) 405 (W) 998	14 199	364 725	27 74	12 190		1 3		1							
Geneva	1034	331	652	51	325	1				5		1	4			
	(C) 142 (W) 892	16 315	115 537	11 40	16 309						5	1	4			
Barbour	728	130	572	26	121	3	2			4			4			
	(C) 317 (W) 411	55 75	254 318	8 18	53 68		2						4			
Coffee	3301	630	2460	211	615	7	2		2	4			4			
	(C) 556 (W) 2745	35 595	471 1989	50 161	34 581				1 1		4		4			
Dale	2883	432	2092	359	416	9	1		1	5			2	1	1	1
	(C) 933 (W) 1950	52 380	723 1369	158 201	51 365					1			2	1	1	1
Total	40845	7335	30946	2564	7009	116	121	8	13	68	2	40	5	20	1	1

TABLE II  
PERCENTAGE POSITIVE FOR HOOKWORM AND  
NUMBER EXAMINED BY COUNTY

County		Per Cent of School Enroll- ment Examined	Per Cent Posi- tive for Hook- worm
Covington	(T)	47.6	26.4
	(C)	29.2	13.0
	(W)	51.3	27.9
Pike	(T)	63.8	18.1
	(C)	66.3	11.0
	(W)	61.3	26.0
Escambia	(T)	44.1	10.1
	(C)	21.1	2.1
	(W)	56.1	11.6
Choctaw	(T)	51.2	14.4
	(C)	68.5	6.3
	(W)	30.3	36.3
Henry	(T)	76.7	12.8
	(C)	62.8	8.5
	(W)	97.4	17.0
Conecuh	(T)	36.1	13.8
	(C)	44.3	12.2
	(W)	26.4	17.1
Houston	(T)	78.0	16.1
	(C)	67.1	8.3
	(W)	83.1	19.0
Washington	(T)	60.8	22.0
	(C)	79.9	9.7
	(W)	50.1	32.8
Butler	(T)	19.3	14.3
	(C)	11.6	2.9
	(W)	26.6	19.0
Geneva	(T)	15.3	31.4
	(C)	11.2	11.2
	(W)	16.2	34.6
Barbour	(T)	14.3	16.6
	(C)	9.5	16.7
	(W)	23.2	16.5
Coffee	(T)	42.1	18.6
	(C)	28.8	6.1
	(W)	46.4	21.1
Dale	(T)	53.9	14.4
	(C)	66.8	5.4
	(W)	49.4	18.7

TABLE III  
RELATIONSHIP OF RURAL AND URBAN AREAS TO  
INCIDENCE OF HOOKWORM INFECTION

	Per Cent Speci- mens Examined	Per Cent Positive for Hookworm
City	21.5	7.3
County	78.5	19.8

The percentage positive for hookworm, percentage of school enrollment examined, and race are presented in Table II. Escambia County had the lowest rate of infestation, with Geneva County the highest. However, all students examined in the latter county were from rural areas where the prevalence of hookworm would be expected to be greater. When the specimens are separated as to rural or urban areas, the per-

TABLE IV  
COMPARISON OF 1937 TO 1951 SURVEY FOR  
HELMINTHS

County	1934-1937			1951-1952		
	N. amer- icanus	H. nana	As- caris	N. amer- icanus	H. nana	As- caris
Covington	40.9	0.5	0.1	26.4	.....	0.09
Pike	44.9	0.5	0.3	18.1	0.02	0.08
Escambia	31.5	0.5	0.6	10.1	0.02	1.38
Choctaw	58.7	0.2	0.3	14.4	0.07	0.07
Henry	33.8	0.6	0.1	12.8	0.05	.....
Conecuh	37.8	0.02	0.6	13.8	.....	1.0
Houston	29.7	0.5	0.1	16.1	.....	0.03
Washington	43.3	0.2	2.4	22.0	0.07	1.25
Butler	40.5	0.4	0.3	14.3	.....	0.28
Geneva	30.7	0.5	0.02	31.4	.....	.....
Barbour	24.6	0.5	0.3	16.6	.....	0.27
Coffee	61.7	0.8	0.3	18.6	.....	0.06
Dale	19.0	0.6	0.1	14.4	.....	0.03
Total	37.0%	0.48%	0.37%	17.1%	0.01%	0.29%

TABLE V  
RELATIONSHIP OF RACE TO HOOKWORM AND  
ASCARIS INFECTION

	Per Cent School Enroll- ment Ex- amined	Per Cent Positive for Hookworm	Per Cent Positive for Ascaris
Colored	47.3	8.7	.6
White	49.5	21.7	.12
Total	47.3	17.1	.29

centage positive for hookworm is over twice as great in the rural areas. This is well illustrated in Table III. The total percentage for all the counties was 17.1%.

In the 16 ensuing years since 1937 the reduction of hookworm has been progressing steadily. In 1937 the total percentage of infestation for the whole state was 15.3%<sup>1</sup> whereas in 1952 it was 17.1% for 13 counties. If one compares the same counties in 1937 and 1952, the percentage positive was reduced from 37.0% to 17.1% or over a 50% reduction (Table IV).

As expected, the hookworm rate was less in the Negro group than the white. Table V gives the combined percentage result of infestation among white and Negro groups.

#### ASCARIS

In the thirteen counties ascaris was found in 0.29% of the specimens examined. Only three counties, Escambia, Washington, and Conecuh, had 1% or over (Table IV). The remaining 10 showed a definite decrease over the 1937 figure which was 0.37%. The greater incidence of ascaris infestation in Negroes is shown in Table V.

#### H. NANA

Out of the total specimens examined, only eight were positive for *H. nana*, which gives an infestation rate of 0.01% for the 13 counties against 0.48% in 1937.

## TRICHURIS TRICHURIA

Only thirteen of the 40,845 specimens examined showed the presence of *T. trichuria*.

## DISCUSSION

Several factors have helped reduce the hookworm rate in Alabama: extensive progress has been made in sanitation by increasing the number of sanitary privies and septic fields; more country schools have been consolidated, resulting in better sanitation and less likelihood of infection; and, lastly, diagnosis and treatment have been continuously carried out, along with education. In a later survey, not included in this report, 1,524 first grade students were examined in Covington County and of these 313 were positive for hookworm, or 20.5% as against 26.4% for school children of all ages. Thus, in the beginning school children where one would expect the rate to be higher, it is actually less than among school children of all ages.

The other helminth infections remained very much the same as in the 1937 survey and are probably what one would expect to find in most areas of the central states. While *E. vermicularis* was found, the results are not recorded here due to the inadequacy of the method of examination.

Treatment of children varied from county to county. In some counties the children were given hexylresorcinol, with instructions to the family as to administration. In some areas, the treatment was given at school. In a resurvey of one county (Escambia) in which over 115 treated children were reexamined, 57 were still positive. Since Smillie<sup>3</sup> has pointed out that only 80 to 85% of hookworms are eliminated by a single treatment series of hexylresorcinol, one would not expect a complete cure with one course of the drug, and physicians, therefore, should exert every effort to administer a second series.

The decline of hookworm infection from 37% in these counties in 1937 to 17% as of now is indeed encouraging. Clinically the typical "hookworm child" is rarely seen. In a recent survey, over half the children tested were found positive for hookworm in Western Florida,<sup>4</sup> but when ova counts were

done, only 7.7% were found moderately or heavily infected. If ova counts had been done in Alabama, it is felt the same situation would prevail. Under the limited personnel available in the laboratory it was impossible to devote any time to this phase of the work, however desirable.

The need for large surveys no longer exists in Alabama. In selected areas there is still justification for periodic sampling; otherwise samples can always be collected on an individual basis. Hardy<sup>5</sup> has nicely phrased the problem: "Optimum health, not the mere absence of disease, is the objective of public health and obstacles to the attainment of this goal should be removed. The individual has a right to be free of parasites. This may be obtained by sanitation, a slow but permanent solution. The rapid and still needed approach is through laboratory diagnosis and treatment."

It appears not unreasonable that we have now reached the point where we cannot wait for sanitation but should attempt elimination of the disease by diagnosis and treatment. Realizing that sanitation is the complete prevention, it is expecting too much to hope to eradicate hookworm by this method for many years. Why not intensively examine and treat in heavily infected areas so that within a few years the disease will have disappeared? Certainly, at least all beginning school children should be routinely screened and treated where necessary so that they may start out their school career with as few obstacles as possible.

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5. Hardy, Albert V.: The Public Health Laboratory—Yesterday, Today and Tomorrow, *Pub. Health Rep.* 68: 968 (Oct.) 1953.

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Mass community (chest x-ray) surveys have been valuable, and from them we have learned to pinpoint our targets. We started with the idea that all one had to do was to seek out the cases through mass surveys and all TB eradication would be added unto us, but it turned out to be more complicated than that. Actually all the mass surveys provide is a cross-section of the active disease on one day of the year or one day in three years—the average interval between surveys. A good deal of tuberculosis can develop in the interval and it is important to have facilities to find it. The other point is that prompt follow-up is essential. Too many people who conduct surveys think the important point is numbers rather than a prompt follow-up of those with abnormal films. Proper selection and timing of such surveys, with adequate follow-up through coordination with regional clinics, will be the watchword of the next decade.—Wherrett, *Canad. J. Pub. Health*, May '53.

3. Smillie, W. G., and Rhoads, C. P.: *The Encyclopedia of Medicine, Surgery and Specialties*, p. 266, 1939, F. A. Davis Co., Philadelphia, Pa.

4. Hood, Marian: The Present Status of Hookworm Infection in Florida, *Am. J. Trop. Med.* 27: 505 (July) 1947.

**Treatment of Snake Bite**—Firm, early application of a tourniquet at the nearest one bone level between the bite and the body is recommended: in the case of a finger or toe, at the base of the digit; in the case of the hand or forearm, the mid-upper arm; in the case of the foot or leg, the lower thigh. In cases of bites above the knee or elbow, the tourniquet necessarily will be proximal to the bite. The tourniquet must consist of material at hand, preferably some elastic material. If possible those at the arm or thigh level should have a protective layer beneath. The tourniquet should be applied tightly and released at 15 minute intervals for a period of about one minute.

Some controversy exists regarding the advisability of incision of these wounds; one recent article advocated the discontinuance of cut and suction. For the time being when one is dealing with the Florida variety of venomous snakes, it would seem wiser to continue use of incision and suction. In considering incisions of the fang marks for the purpose of removal of venom, one should remember that the fangs of all pit vipers are curved, and with the snake always striking in a downward stroke the venom would not be injected immediately under the fang marks but, rather, backward in the line of the snake's body at the time he struck. The incisions should be made starting at the site of the fang marks and extending backward at a depth and length comparable to the size of the snake and the strength with which he struck. The value of multiple incisions proximal to the site of injury is doubtful and certainly not advisable as a first aid procedure. Underlying structures must be borne in mind.

Suction by mouth seems to be a natural reaction and is a safe procedure in the absence of cuts and abrasions in the mouth. Since the venom is rapidly absorbed and removal of a portion of it by suction can be accomplished, this seems a valuable procedure. There are available several devices for the purpose of suction. Experience in these cases has been limited to the use of the variable-sized rubber suction cups so made as to fit onto the fingers or toes satisfactorily.

Antivenom, if available, should be used immediately following tourniquet, cut and suction or, if possible, at the same time these procedures are being carried out. If not available at that time, it should be used as soon as possible. People carrying antivenom or those apt to use it should familiarize themselves with use of the special syringe by reading the instructions enclosed in the package.

Exercise or use of the struck part, particularly if an extremity, definitely increases the absorption of the venom. If possible, that part of the body should be given immediate and complete rest.

Transportation of the patient to the nearest available adequate medical facilities should be planned in such a manner that the patient reaches his destination in the least time with minimal exertion.—*Andrews and Pollard, J. Florida M. A., Dec. '53.*

**Low Back Disorders**—Severe lumbosacral pain suggests severe strain to ligaments of this joint. Any stretch or lengthening of those ligaments holding the intervertebral disc within its normal boundaries will be followed by local edema and pain. Bulging under the normally pent-up hydraulic pressure within the disc, and further emphasized by the secondary edema, the possibility of nerve root pressure against the posterior wall of the spinal canal is readily visualized. This pathological picture is not a "herniated disc" syndrome; it merely threatens to become this entity. Early recognition of this clinical picture, particularly if seen during the first attack, may reverse the process to a degree sufficient to relieve pain and effect healing. Absolute bed rest is therefore indicated.

The regular hospital bed with head and knee elevators and with boards under the mattress serves adequately. An overhead frame is added to provide a base for a hand hold and for traction attachments. The patient is placed in recumbency with spine, hips, and knees semiflexed by raising head and knee elevators eight to ten inches. Traction of eight pounds is applied to each leg through adhesive plaster straps. Supportive slings under thighs and calves may be used to counter-balance the weight of the legs; this is known as balanced traction. Avoid traction of the legs in full extension as this position does not relax the lumbar lordosis and may increase the patient's discomfort, especially the radiating pain; should this occur, a disc protrusion must be suspected and definitive surgical treatment contemplated. Improvement, however, usually follows; within one to two days pain may be decreased sufficiently to allow the patient to turn on his side with bed flat and traction released. Low back diathermy and muscle massage may be added, followed by other previously outlined steps.

The decision as to the patient's ability to sit up must be made with care as too early stresses will repeat the strain process. A fair test of ligament healing is evidenced by the patient's ability to raise his buttocks for bed pan use; this exertion calls for sacrospinalis and gluteal active contraction while lumbosacral lordosis is momentarily increased. A successful step of this nature suggests the addition of a corset or brace and gradual change to sitting position, followed shortly by protected walking if progress continues. Any recurrence of slight pain indicates a return to a prior phase of activity. With continued improvement, a restricted activity program should be continued for six to twelve weeks. Failure to obtain a serviceable comfortable back after six months conservative trial places the problem in the laminectomy or fusion group.—*Hamsa, J. Louisiana State M. Soc., Dec. '53.*

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There is a "sensitive" period in the effective treatment of tuberculosis which applies not only to the tubercle bacillus, when it is most vulnerable to attack, but also to the patient when he is most receptive of advice. That period is when the disease is first discovered.—*Eli H. Rubin, M. D., New York State J. Med., June 15, 1953.*

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ROUNDUP STORY  
HOUSE OF DELEGATES  
AMERICAN MEDICAL ASSOCIATION  
DECEMBER 1-4, 1953

The House of Delegates of the American Medical Association, meeting at the Jefferson Hotel in St. Louis during the Seventh Annual Clinical Session, took important policy actions on social security, voluntary health insurance, medical ethics and unethical practices, medical education, hospital accreditation, military affairs, and a wide variety of subjects affecting both physicians and the public.

Highlight of the opening House session on the first day was the announcement that Dr. Joseph I. Greenwell of New Haven, Kentucky, had been selected by a special committee of the A. M. A. Board of Trustees as the 1953 "General Practitioner of the Year." The annual medal and citation for community service by a family physician were presented to Dr. Greenwell by Dr. Edward J. McCormick of Toledo, Ohio, President of the American Medical Association, who also addressed the opening session.

The day's program also included addresses by Dr. James R. Reuling of Bayside, New York, Speaker of the House of Delegates, and Dr. Chester Keefer of Boston, Special Assistant to Mrs. Oveta Culp Hobby, United States Secretary of Health, Education and Welfare. Annual reports were presented by Dr. George F. Lull, Secretary and General Manager of the A. M. A.; Dr. Dwight H. Murray of Napa, Calif., Chairman of the Board of Trustees, and by the standing and special committees of the House of Delegates.

Approving a recommendation by its Reference Committee on Legislation and Public Relations, the House passed a resolution reaffirming its opposition to the compulsory coverage of physicians under the Old Age and Survivors Insurance provisions of the Social Security Act and advocating passage of the Jenkins-Keogh bills now pending in Congress. These bills were described as providing for "the development of a voluntary pension program which is equitable, free from compulsion, and satisfies the retirement needs of physicians."

The reference committee report adopted by the House said:

"The purpose of these bills is to eliminate the discrimination and inequities which exist under

present tax laws by extending the tax deferment privilege to the country's ten million self-employed and also to millions of employees who are not covered by pension plans. The purpose of the resolution is to reaffirm our support of the voluntary pension program provided in the Jenkins-Keogh bills and to reaffirm our strong opposition to the extension of compulsory coverage of physicians and other self-employed persons under Title II of the Social Security Act."

The same committee report urged continued action to obtain passage of the Brickner Amendment (S. J. Res. 1) and approved the principle of legislation which would reduce or remove the limitation on the deduction of medical and dental expenses for income tax purposes. It also opposed any further extension of the "Doctor Draft" Law beyond the present expiration date of June 30, 1955.

The report said that "your Committee feels strongly that there should be no further extension of the 'Doctor Draft' Law. We feel that the legislation is discriminatory and urge the Committee on Legislation and the Board of Trustees to actively oppose any further extension."

The House acted to accelerate the development of voluntary health insurance by passing a resolution requesting the Council on Medical Service to proceed immediately with a special study of the problems of catastrophic coverage and coverage for retired persons. The Council was asked to present its findings and recommendations to the House not later than the 1954 Clinical Meeting. The resolution pointed out:

"There are two large groups of citizens for whom improved coverage could be offered under present prepaid medical care plans, namely: (a) those individuals who suffer catastrophic or long-continued and highly expensive illness and whose financial resources are not adequate to meet the cost thereof and (b) those citizens who have retired and are living on small incomes and who are not eligible under presently existing public or private plans."

The resolution emphasized the medical profession's "responsibility to make every effort to promote such prepaid medical coverage for all citizens whose circumstances make them eligible."

Another resolution on voluntary health insurance, adjudged to be emergency business by the Reference Committee on Insurance and Medical Service and then passed by the House, stated that "the American Medical Association condemns all insurance contracts which classify any medical serv-

ice as a hospital service." The resolution reaffirmed previous actions of the House defining pathology, radiology, anesthesiology and physiatry as medical services.

A second emergency resolution, which would have endorsed the principle of federally subsidized scholarships for prospective military personnel in order to encourage the building up of a career-basis medical corps for the armed forces, was referred by the House to the Board of Trustees for study and action.

A resolution introduced by the Iowa State Medical Society, calling for approval of a joint-billing procedure involving services rendered by two or more physicians, was referred to the Judicial Council, at the suggestion of the Reference Committee on Miscellaneous Business, with the recommendation "that the Judicial Council investigate the factors involved in the matter as presented and determine if there are new factors or new facets that would cause it to change the opinion" determined in 1952.

The House approved a revision of one section of the Principles of Medical Ethics of the A. M. A. which clarifies the relationship of physicians to all forms of public information media. The revision had been worked out by the Council on Constitution and By-laws.

In an effort to solve the publicity problems resulting from unethical practices by a small minority of doctors, the House referred to the Board of Trustees a resolution calling for appointment of a special committee with broad professional representation to study all aspects of the problems. The Board was asked to study and implement the intent of the resolution and to report its findings to the House at the June 1954 meeting in San Francisco.

To clarify misunderstandings among physicians regarding the rules and regulations of the Joint Commission on Accreditation of Hospitals, especially as they concern the role of the Department of General Practice in a hospital, the House adopted the following resolution:

"That this House of Delegates of the American Medical Association request the Joint Commission on Accreditation of Hospitals to publish an article, or series of articles, in the Journal of the American Medical Association and other official publications circulating among the medical and hospital professions, to acquaint the medical-hospital profession with the regulations, by-laws and their interpretations, and

"That the Commission clarify the methods by which an aggrieved hospital or its staff may appeal a decision with which they are not in agreement."

In the field of medical education the House was "pleased to note" that a fourth grant of \$500,000 had been made by the American Medical Association to the American Medical Education Foundation for financial aid to the nation's medical schools. The Foundation reported that its 1953 income now totals \$1,174,000 and that the number of contributors now is more than double the total in 1952. Dr. Louis H. Bauer, of New York, immediate past president of the A. M. A., was elected president of the Foundation just prior to the opening of the A. M. A. Clinical Session. He succeeds the late Dr. Elmer L. Henderson of Louisville, also an A. M. A. past president.

At the opening session of the House, Dr. McCormick in his presidential address made a strong appeal to the nation's physicians for "action that will further the full confidence of the public in our profession."

"Good public opinion cannot be bought," he declared. "It must be earned through exemplary conduct and genuine service in the public interest. Whatever money the A. M. A. and its constituent societies spend for public education and public relations is wasted unless individual physicians take wholehearted interest in assuring the success of these ventures."

Dr. Reuling, emphasizing that much serious work remains to be done, warned that "times are just as troubled as when we had blanket bills before Congress which would have socialized the practice of medicine."

Dr. Keefer told the House that "the voluntary way has been the most successful in the past and there is no reason to believe it will not continue to be in the future." He urged maximum effort, cooperation and leadership on the community level.

Just prior to the Clinical Meeting the Joseph Goldberger award for outstanding contributions in the field of clinical nutrition was presented to Dr. James Somerville McLester of Birmingham, a practicing physician for more than 50 years. The award was presented by the A. M. A. through its Council on Foods and Nutrition.

Final registration at the St. Louis Clinical Session was expected to total approximately 7,500, including about 2,700 physicians.

## THE MEDICAL PROFESSION'S STAND ON VETERANS ADMINISTRATION MEDICAL CARE

The U. S. veterans population is now over 20,000,000 individuals and increasing annually. Medical care for these individuals is presently a subject of widespread debate. Current legislation entitles any war veteran to medical care and hospitalization through the Veterans Administration, regardless of the origin of his disability or his ability to pay. A veteran with a non-service-connected disability must merely state that he cannot afford private medical care in order to be admitted for medical care. During a year's period, 1951, over 84 per cent of the patients in Veterans Administration hospitals received medical care at government expense for disabilities incurred following military discharge.

The medical profession fully endorses and supports the medical program of the Veterans Administration through which veterans receive medical care and hospitalization without cost for illness or injury incurred as a result of military service. On the other hand, it is the opinion of men of the profession that the remaining groups of veterans whose disabilities are totally unrelated to military service should not continue to receive "free" medical care and hospitalization from the government. This responsibility should revert to the individual and, where necessary, to the local community. The provision of "free" medical care and hospitalization to nearly one-half of all employable males in the country is a giant step toward a complete federal health program.

It is the belief of the profession that it is economically unsound to authorize "free" lifetime medical care for those who suffer no mishap in uniform, while other citizens with no military background must pay their own way. The tremendous cost of providing medical benefits to veterans with non-service-connected disabilities is an ever-increasing burden on the taxpayer. In the past eight years, the cost of the VA medical program has increased 600 per cent. The Congress voted \$747,415,264 to finance the VA medical program during 1953.

The VA is currently operating 154 hospitals with a total of 116,986 beds. If current veterans' benefits are continued, another 148,000 beds ultimately will be needed. The

expansion program currently calls for 182 additional hospitals with 135,217 beds, and 17 domiciliary units with 17,443 beds. The total cost of such a program, computed at \$20,000 per bed, will be around \$3,000,000,-000.00. Financing the operation of these added facilities would require the annual

appropriation of a sum of money of astronomical size.

Such a gigantic "free" medical care program, if allowed to continue, would obviate the fight against socialized medicine in the United States; it would be an established fact.

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## THE ASSOCIATION FORUM

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

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### IT IS IMPORTANT

W. A. Dozier, Jr.

Director of Public Relations

For several years now, the Alabama medical profession has heard certain of its leaders make a plea for better public relations; and all of us know that good public relations is based primarily on a good doctor-patient relationship.

The following editorial appeared in a recent issue of the *Alabama Journal*, and it points out several things which reiterate what has been said very often but which are important enough to think of again. The editorial was entitled "Where Is the Old Family Doctor?" and read as follows:

"There is not a person who does not like for his doctor to treat him as an individual instead of another medical case for the books.

"Washington, D. C., doctors have been given a bit of advice along these lines. It was given by the district's medical society and the points can well be taken by medical men in other sections of the country.

"First of all the society let it be known that it is aware that doctors are a worried lot of people who are rushed most of the time probing into the mysteries of ailments.

"However, the doctors were cautioned to stop and show a little warmth, friendliness and understanding for their patients. One lady of the medical profession contends that people are asking 'where is the old family doctor?' Then she explained it is not his medicine they want but his human approach.

"Another doctor told his colleagues that their secretaries are over protective and some have gotten to the point where no one can speak to the boss.

"One thing the meeting didn't mention is that the medical profession is getting so specialized that several minor ailments which formerly could be taken care of by one visit to the doctor's office now require the attention of several medical men, and thus add up to additional fees to be paid."

At the risk of beating a dead horse, three points made evident above should be restated. (1) To each patient, he is the most important person you will see that day; and in this world of insecurity he wants to feel as important as his problems are to him. (2) In many offices not enough attention has been given to the impression made by the ancillary personnel; they are very important and should be trained to use proper techniques. (3) The profession still has a tremendous problem in the matter of costs, and every explanation that is given by the physician to a patient is one more step in the right direction.

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**Retrolental Fibroplasia**—There is no specific treatment for retrolental fibroplasia. In the early stages of venous dilatation, retinal edema, and serous exudation the disease may retrogress. If the retina is slightly or partly detached for a short time it may reattach with little damage to the eye but marked detachments lead to a loss of sight that may be relatively slight or total. The application of various ophthalmic solutions such as cortisone, miotics, and mydriatics to the conjunctiva have not proved useful. The addition of vitamin supplements to the diet of the infant has no effect. Vitamin E at one time was given as a preventive but many investigations have shown it has no demonstrable effect. Parenteral cortisone and ACTH have little influence on the course of the disease at any stage. Roentgen ray treatment is of questionable merit; its purpose is not to prevent or to cure but to hinder or change the course of events in the progress of the disease. There is no positive evidence that it does improve the end result.—Krause, *Illinois M. J.*, Dec. '53.

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STATE DEPARTMENT OF HEALTH

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## BUREAU OF ADMINISTRATION

D. G. Gill, M. D.

State Health Officer

## TULAREMIA

Thirteen Alabamians developed tularemia in 1952. That total exceeded by four the total for 1942, ten years earlier. However, it was not the smallest of the decade. Only five cases were reported in 1951. The largest yearly total of the decade was the one for 1947. Twenty-three cases were reported that year.

From these figures it is easy to see that tularemia is not one of the most serious disease problems in this state. Against those 13 tularemia cases reported in 1952 there were 37 cases of undulant fever, 44 of tetanus, nearly 2,500 of mumps, nearly 4,800 of cancer, more than 2,700 of pneumonia, approximately 2,450 of tuberculosis and more than 16,000 of influenza. Obviously, any number of diseases far outrank it in the number of people it attacks.

Nevertheless, tularemia is a serious disease problem. It can be, and often is, troublesome to those who contract it. It can cause a great deal of pain. It may keep its victim away from his job for a long time. That may cause a heavy financial loss. For, remember, one's pay often stops when, or soon after, he stops working. Let us, therefore, consider this disease for a few minutes. We shall use the familiar question-and-answer form.

## 1. How does one contract tularemia?

It may be contracted in any one of various ways. But suppose we see how one person did so. He was a typical American farmer. His case was described several years ago by a writer in *Hygeia*, now *Today's Health*. That, as you probably know, is the magazine published by the American Medical Association for the information of the American people in health matters. Robert T. Little was the author. Here is what he wrote:

"One day in the autumn Farmer Olsen went hunting. He did not have much luck. Rabbits were scarce, but finally his dog, Prince, flushed a large one. It did not seem very lively, however, and an easy shot knocked it head over heels.

Farmer Olsen picked this animal up and put it in the game pocket of his hunting coat and then turned homeward. He had had a long afternoon's hike but only a little luck."

After Farmer Olsen returned home, he went to the woodshed to skin his rabbit. For that job he used his jack-knife. In removing the animal's intestines, he injured his hand by striking it against one of the ribs which had been shattered by his shot. Then, when he removed the liver, he noticed that it was covered by a mass of small spots. He did not pay much attention to either of these things but decided it might not be safe to eat his rabbit after all. So he threw it to his pigs. Then he washed his hands and went in to supper.

Now let us get back to Mr. Little's article:

"Exactly four days later Farmer Olsen felt very ill with a severe headache. Later on he had a sharp chill and then a burning fever. His wife took his temperature and it was 104. In addition, the scratch on his hand made by the broken rabbit bone had not healed but had ulcerated and his whole hand and arm throbbed and ached. Farmer Olsen thought he must have blood poisoning, and so his wife telephoned Dr. Goodman.

"Dr. Goodman was alarmed at Mrs. Olsen's anxious voice; so he came to the farmhouse in a hurry. He examined the punched-out ulcer on Mr. Olsen's hand, felt his pulse, looked at his arm and noticed that the lymph glands at his elbow were somewhat enlarged. Now Dr. Goodman inquired how he had hurt himself.

"The ulcer did not look like an ordinary infection and Mr. Olsen seemed too sick for a small ulcer to be the only cause. The story of the rabbit-hunt was delved into and, as the plot unfolded, a light of recognition appeared on Dr. Goodman's face. Finally, he asked: 'Have you ever heard of tularemia or rabbit fever?'"

And that is the story of how one tularemia victim got the disease.

## 2. How do rabbits with tularemia differ from normal, healthy rabbits?

They do so in various ways. One of the marked changes it brings about has to do with the rabbit's fur. If you have ever played with rabbits—and most of us have as children—you must have noticed how smooth it is. It is extremely pleasing to the touch. But rabbits which have tularemia do not have that kind of fur. It is anything but soft and smooth. Instead, it is rough and

coarse. It is not only unsafe but also unpleasant to stroke them.

But the most conspicuous change is in the rabbit's actions. It is no longer alert and swift-moving. Mr. Little commented on this characteristic in the rabbit Farmer Olsen shot. He wrote, you remember, "it did not seem very lively, and an easy shot knocked it head over heels." You can't imagine a healthy rabbit being knocked down like that. Any rabbit hunter knows that you have to be a pretty good shot—and a pretty quick shot—to kill one with a gun. A rabbit with a bad case of tularemia has a great deal of trouble getting about. In fact it is often possible for a young child to run one down and capture it alive.

3. What other changes occur when a rabbit gets tularemia?

The most important of them occur inside the animal's body. After it has been bitten by an infected insect, the germs introduced in that way begin multiplying rapidly. And of course they do not stay at the site of infection. They spread out to all parts of the body. For some reason, however, they tend to concentrate in two places, the spleen and the liver. And the most important thing they do is to bring about decay of the tissue cells. When this occurs, it causes many scars to form. These produce white, yellowish spots, which vary in size from a needle point to the head of a pin. (Remember those tiny spots Farmer Olsen noticed on the liver of the rabbit he had killed?) Another change—and this one occurs on the outside of the animal's body—is a marked enlargement of the glands in the groin and under the forelegs. You may know them better as kernels.

4. Does everybody who handles a tularemia-sick rabbit get tularemia?

Fortunately, no. If it attacked everyone who handles that kind of rabbit, the number of cases would be many times larger. Farmer Olsen would have been entirely safe—he would not have contracted tularemia—if he had not broken the skin of his hand by striking it against the jagged piece of rib. The skin is a wonderful thing. As thin as it is, it stands solidly between us humans and almost every kind of infection. But, when a break of any kind appears in it, that is quite a different story. There you have the difference between safety and danger. A break of that kind need not be large. In fact

it may be as small as a pinprick. Or it may be a tiny opening caused by a briar while hunting. Germs are tiny too. So the tiniest opening is enough to allow them to gain admittance. And you can never be sure your skin contains no breaks. You may leave home on a hunting trip without a single one, on the hand or anywhere else. But you may get a briar scratch a few minutes after getting into the woods. Or your gun may rub a tiny piece of skin off. Or you may have a sore somewhere which has not completely healed. And, if you do, the protection normally furnished by your skin is of little value.

5. What can the rabbit hunter do to be safe?

There are several rules that should be kept in mind and carefully followed. First, watch a rabbit a few seconds, if possible, before you shoot it. If it appears sluggish and sickly, save your shot. Or, if you want to do a good deed for other hunters, go ahead and shoot it. Then bury it carefully to avoid infection. In that way you will prevent it from being shot and killed by someone else who does not know the danger and might develop tularemia. In the second place, use rubber gloves when handling rabbits. This is a good rule to follow even if you are pretty sure the one you are handling does not have tularemia. And remember that both live and dead rabbits can spread tularemia. So be as careful about wearing gloves when handling one kind as another. Third, keep your hands away from your face whenever you handle wild rabbits. Fourth, wash your hands thoroughly after doing so. This applies even if you have used rubber gloves. Fifth, burn everything that has come into contact with wild rabbits, if that would not involve too heavy an expense. If it would, you should be reasonably safe in sterilizing it. Sixth, keep away from fleas and ticks which may be infected with tularemia germs. For it is actually these tiny insects, rather than the rabbit itself, which spread the disease. Be especially careful not to let them bite you. Seventh, if you have a broken place on your skin which, in spite of all you can do, is likely to come into contact with one or more wild rabbits, apply a good disinfectant to it. You should be warned, however, that this protection cannot be depended upon. It is best to keep broken places in the skin away from possible sources of infection.

6. Is it possible to get tularemia in other ways than by handling diseased rabbits?

Yes, indeed. You and the members of your family can get it by eating the meat of tularemia-infected rabbits. That is a real danger.

7. How can a person protect himself from it?

That may be done by eating only rabbit meat which has been thoroughly cooked. Fortunately, heat kills these germs, as well as others. If you are the family cook, your responsibility is to keep rabbit meat on the fire until all the red juices have been cooked out, including those around the bones. If you eat in restaurants, ask that rabbit meat be cooked extra long. And see that it is.

8. Are all rabbits dangerous from the tularemia standpoint?

In theory, yes. To all practical purposes, no. Any rabbit exposed to infection is likely to get tularemia. However, some rabbits are much more likely to be exposed in that way than others. Wild rabbits are especially likely to come into contact with infected rabbits or to be bitten by insects containing the germ. Domestic rabbits, on the other hand, are kept away from other rabbits and other animals. So there is very little chance of their developing tularemia. To all intents and purposes, therefore, if you or your children keep pet rabbits in your back yard and do not let them get away from there, you need not worry about their getting tularemia.

9. What are the main symptoms of tularemia in humans?

Some of them have been considered indirectly in our comments on Farmer Olsen. But other cases differ from his. The victim usually has a headache. He may vomit. He is almost certain to feel aching pains all over his body. He almost invariably has fever. A sore often, but not always, appears at the place where the germs entered the body, known as the site of infection. Later it (that sore) becomes an inflamed and painful ulcer. The lymph glands under the arms and elbow become markedly enlarged. They also become painful and tender to the touch. They may discharge pus for several weeks.

10. What is the treatment for tularemia?

For a long time there was practically nothing a doctor could do for it, except to keep the patient as comfortable as possible and let the disease run its course. That usu-

ally meant many weeks or even months of invalidism or semi-invalidism. The outlook is much more pleasant now, however. One of the so-called "wonder drugs"—streptomycin—has been used with success in most cases, although medical opinion is not in complete agreement as to its value. As in all cases of illness, you should follow the advice of your doctor.

11. Are rabbits the only animals which develop tularemia?

No. Not by any means. You can get it also from a number of others. The list includes ground squirrels, rats, mice, gophers, opossums, porcupines, grey foxes, woodchucks, beavers, sheep and coyotes. Somewhat strangely, certain fowl also get tularemia occasionally. They include grouse, quail, pheasants and sage hens.

## BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director

### SPECIMENS EXAMINED

October 1953

Examinations for diphtheria bacilli and Vincent's .....	493
Agglutination tests .....	976
Typhoid cultures (blood, feces, urine and other) .....	585
Brucella cultures .....	14
Examinations for malaria .....	134
Examinations for intestinal parasites .....	3,665
Serologic tests for syphilis (blood and spinal fluid) .....	24,852
Darkfield examinations .....	6
Examinations for gonococci .....	1,660
Examinations for tubercle bacilli .....	3,316
Examinations for meningococci .....	0
Water examinations .....	1,702
Examinations for Negri bodies .....	88
Milk and dairy products examinations .....	5,227
Miscellaneous .....	1,141

Total 43,859

Health departments have traditionally worked with the full cooperation of the medical profession. The family physician is the front line of any public health endeavor. In order for a community health program to succeed the practitioner must give full cooperation and active rather than passive support. Experience has shown that the more extensive the public health program a community enjoys, the greater the demand made by the public on services not only for the treatment of illness but also for health supervision and for preventive services.—*Vlado A. Getting, M. D., J. A. M. A., Sept. 26, 1953.*

The mild, inapparent infection of early adolescent years may be the origin of the destructive tuberculosis of puberty or adulthood.—*Rene J. Dubos, Am. Rev. Tuberc., July 1953.*

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1953

	Sept.	Oct.	E. E.* Oct.
Typhoid and paratyphoid fever	9	8	4
Undulant fever	3	3	0
Meningitis	9	7	6
Scarlet fever	28	64	72
Whooping cough	43	16	40
Diphtheria	28	47	65
Tetanus	4	7	3
Tuberculosis	147	274	222
Tularemia	0	1	0
Amebic dysentery	1	2	2
Malaria	0	4	21
Influenza	77	211	74
Smallpox	0	0	0
Measles	27	44	12
Poliomyelitis	53	38	27
Encephalitis	0	0	0
Chickenpox	6	53	10
Typhus fever	0	1	15
Mumps	15	18	22
Cancer	370	365	326
Pellagra	1	2	3
Pneumonia	103	114	102
Syphilis	211	208	1075
Chancroid	7	12	15
Gonorrhea	384	413	562
Rabies—Human cases	0	0	0
Positive animal heads	25	35	0

As reported by physicians and including deaths not reported as cases.

\*E. E.—The estimated expectancy represents the median incidence of the past nine years.

In tuberculosis a realistic acceptance of the illness is a prime essential if medical treatment is to be effective. The patient must not only allow medical procedures to be instituted, but must participate actively in the carrying out of the medical recommendations.—*Minna Field, Patients Are People, Columbia University Press, 1953.*

Too much should not be expected from general population chest roentgenographic surveys. Certainly, many patients are diagnosed through surveys as having progressive disease. Placing them under medical supervision promptly may prolong or even save life. But "early diagnosis" is not synonymous with minimal disease and prevalence is far from synonymous with incidence. Analysis of the morbidity and mortality subsequent to original diagnosis is the test of the contribution mass chest roentgenographic surveys make to the tuberculosis case-finding program.—*Wendell R. Ames, M. D., and Miller H. Schuck, M. D., Am. Rev. Tuberc., July 1953.*

Cooperative clinical research as applied to problems of tuberculosis therapy has been so eminently successful, regardless of the sponsoring agency, that other fields of clinical research should take more cognizance of this as a means to advance knowledge. While similar end results would eventually appear from more conventional studies, the time required to ascertain the truth would be greatly prolonged.—*H. Corwin Hinshaw, M. D., Am. Rev. Tuberc., Aug. 1953.*

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR AUGUST 1953

Live Births Stillbirths and Deaths by Cause	Number Registered During August 1953			Rates* (Annual Basis)		
	Total	White	Colored	1953	1952	1951
Live births	7869	4937	2932	29.2	28.6	28.7
Stillbirths	183	91	92	22.7	23.4	26.0
Deaths, stillbirths excluded	2055	1228	827	7.6	7.1	8.1
Infant deaths:						
under one year	241	129	112	30.6	30.2	32.8
under one month	191	113	78	24.3	22.4	23.4
Cause of Death						
Tuberculosis, 001-019	29	11	18	10.8	17.7	25.0
Syphilis, 020-029	5	1	4	1.9	4.5	1.1
Typhoid and paratyphoid, 040, 041						0.4
Dysentery, 045-048	3	2	1	1.1	1.1	1.5
Diphtheria, 055	1	1		0.4	0.4	0.8
Whooping cough, 056	1		1	0.4	0.4	2.3
Meningococcal infections, 057					0.4	0.8
Poliomyelitis, 080-081	7	3	4	2.6	1.1	4.9
Encephalitis, 082, 083	1	1		0.4		0.8
Malaria, 110-117					0.4	
Malignant neoplasms, 140-205	254	181	73	94.3	87.7	79.7
Diabetes mellitus, 260	28	16	12	10.4	7.5	11.0
Pellagra, 281					0.4	0.4
Vascular lesions of central nervous system, 330-334	248	144	104	92.1	80.9	99.0
Other diseases of nervous system and organs of special sense, 340-398	23	11	12	8.5	9.0	11.0
Rheumatic fever, 400-402	3		3	1.1	1.1	1.9
Diseases of the heart, 410-434	495	347	148	183.8		
Hypertension with heart disease, 440-443	127	50	77	47.2	207.4	254.2
Diseases of the arteries, 450-456	43	27	16	16.0	12.4	9.5
Other diseases of circulatory system, 444-447, 460-468	34	16	18	12.6	12.8	9.5
Influenza, 480-483	3	2	1	1.1	2.3	2.7
Pneumonia, 490-493	40	23	17	14.8	16.6	20.1
Bronchitis, 500-502	3	3		1.1		0.8
Appendicitis, 550-553	5	2	3	1.9	0.4	0.8
Intestinal obstruction and hernia, 560, 561, 570	11	4	7	4.1	4.1	3.8
Gastro-enteritis and colitis (under 2) 571.0, 764	18	5	13	6.7	5.3	6.8
Cirrhosis of liver, 581	14	11	3	5.2	3.4	3.8
Diseases of pregnancy and childbirth, 640-689	13	5	8	16.1	14.2	20.6
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 681, 682, 684	2		2	2.5	2.6	1.3
Congenital malformations, 750-759	23	18	5	2.9	2.8	4.9
Accidental deaths, total, 800-962	153	97	56	56.8	19.3	61.1
Motor vehicle accidents, 810-835, 960	82	57	25	30.4	20.3	31.1
All other defined causes	385	211	174	143.0	143.4	141.5
Ill defined and unknown causes, 780-793, 795	85	36	49	31.6	31.2	37.9

Rates: birth and death rates per 1,000 population; infant deaths—per 1,000 live births; stillbirths per 1,000 deliveries; maternal deaths per 10,000 deliveries; deaths from specified causes per 100,000 population.

## BOOK ABSTRACTS AND REVIEWS

**The Surgery of Infancy and Childhood.** By Robert E. Gross, M. D., D. Sc., and William E. Ladd, M. D., Professor of Children's Surgery, the Harvard Medical School, and Chief of Surgical Service, the Children's Hospital, Boston. Cloth. Price, \$16.00. Pp. 1000, with 1483 illustrations. W. B. Saunders Company, Philadelphia and London, 1953.

This book is a comprehensive treatise on pediatric surgery. It supersedes the excellent book of Ladd and Gross on abdominal surgery in infancy and childhood. It carries the excellent qualities of this work beyond the abdomen to include many other subjects. This book represents mainly the experience in this specialty of the Children's Hospital in Boston and the Harvard Medical School.

It would not be possible to review this work adequately by describing isolated parts of it. In order to give the reader a cross section of its contents, the title of every third of the sixty-nine chapters is listed below.

Anesthesia for Pediatric Surgery  
Atresia of the Esophagus  
Congenital Hypertrophic Pyloric Stenosis  
Congenital Stenosis of the Intestine and Colon  
Annular Pancreas Producing Duodenal Obstruction  
Foreign Bodies in the Alimentary Tract  
Polyps of Intestine and Colon  
Malformations of the Anus and Rectum  
Primary Peritonitis  
Rare Conditions of the Umbilicus and Abdominal Wall  
Congenital Hernia of the Diaphragm  
Hydrocele  
Tumors of the Testicle  
Miscellaneous Conditions of the Liver and Biliary Passages  
Embryoma of the Kidney (Wilms' Tumor)  
Uretero-Pelvic Obstruction  
Ureterocele  
Hypospadias  
Pectus Excavatum (Funnel Chest)  
The Patent Ductus Arteriosus  
Tetralogy of Fallot  
Thyroglossal Cysts and Sinuses  
Wringer Injuries of the Arm  
This volume would be a valuable addition to the library of any one doing surgery on children.  
L. L. Hill, II, M. D.

**Surgery of the Pancreas.** By Richard B. Cattell, M. D., and Kenneth W. Warren, M. D., Surgeons, Lahey Clinic, New England Baptist Hospital, and New England Deaconess Hospital. With foreword by the late Frank H. Lahey. Cloth. Price, \$10.00. Pp. 374, with 100 illustrations. W. B. Saunders Company, Philadelphia, 1953.

A foreword by Dr. Frank H. Lahey indicates that, as has been the custom at Lahey Clinic in developing surgical standards, experience with pancreatic lesions and procedures was limited to

a few men until plans of management had been stabilized. This experience with over 1000 patients with pancreatic disease is the basis of the book.

The anatomy and physiology of the pancreas are discussed in some detail. This chapter is followed by an excellent presentation of congenital malformations of the pancreas. Aberrant pancreatic tissue in the stomach wall and in the duodenal wall and annular pancreas are discussed. Attention is directed to the ease with which these lesions can be confused with gastric and duodenal ulcers and neoplasms. X-rays and photographs of specimens emphasize the differential points. Case histories are presented.

The chapter on Acute Pancreatitis includes the various theories of etiology, diagnosis from the clinical, x-ray, and laboratory points of view, treatment and prognosis. Case histories add a great deal to the value of the discussion.

Other chapters on Chronic Relapsing Pancreatitis, Pancreatic Cysts, Pancreatic Injuries, Islet Adenomas and Hyperinsulinism, Carcinoma of the Pancreas and Periampullary Area, and Total Pancreatectomy are presented in a very complete form, including signs, symptoms, diagnosis, x-ray and laboratory findings, illustrative case histories and operative technique, with variations as indicated. The discussion on the technique of pancreatoduodenal resection is particularly excellent. The limitations of the effectiveness of this very extensive procedure are very frankly presented.

The many phases of pancreatic disease covered in this book would seem to appeal to any physician who is in active practice because the problem is ever with us. Besides its actual value, it is a most readable work.

John L. Branch, M. D.

**May's Manual of the Diseases of the Eye.** Edited by Charles A. Perera, M. D. Twenty first edition. Cloth. Price, \$6.00. Pp. 520, with 378 figures, including 32 plates in color. The Williams and Wilkins Co., Baltimore, 1953.

This classic text on eye diseases was written especially for general practitioners and beginners in ophthalmology, and the present edition has maintained this purpose.

The text is compact, well written and amply supplied with charts, photographs and drawings to illustrate important steps in ophthalmology. It is probably the most concise manual available for medical students and practitioners of medicine.

The contents of the 21st revised edition include present day beliefs concerning the use of Cortisone and corticotropin in allergic and inflammatory diseases of the eye; antibiotics in ophthalmology; Kronline's operation, scleral resection in the treatment of separation of the retina and retrolental fibroplasia. There is a useful, up-to-

date appendix dealing with the ocular requirements of the Armed Services.

Each chapter contains the specific anatomy and physiology of the subject matter considered, with complete, brief review of the subject, and mod-

ern accepted forms of treatment as a summary.

The 492 pages of this book make it a readily available and wonderful presentation of the fundamentals of ophthalmology.

Karl B. Benkwith, M. D.

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## AMERICAN MEDICAL ASSOCIATION NEWS

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### MEDICINE'S OUTLOOK FOR 1954 GIVEN BY A. M. A. PRESIDENT

A year of greater scientific achievement and continued improvement in medical care was predicted for 1954 by Dr. Edward J. McCormick, Toledo, president of the American Medical Association.

Research workers in our great universities and laboratories have labored untiringly to master nature and harness its laws for the benefit of all mankind, Dr. McCormick stated. By pooling their physical, chemical and biological knowledge and know-how during 1953, they have removed a few more dark continents of ignorance along the advancing fronts of medical science.

These research teams, dedicated to the preservation of life in the fight against such diseases as cancer, infantile paralysis and heart disease, have made recent contributions that are truly great triumphs in the conquest of disease.

Members of the medical profession will do everything possible to bring to every household the benefits of these latest scientific advancements, Dr. McCormick promised.

Dr. McCormick urged the nation's physicians to adopt the following program for the coming year:

1. To continue to bring the best medical service possible to ALL of the people in the United States.
2. To make available full medical service to all rural areas and to alleviate the problem of physician distribution.
3. To solve the problem of indigent medical care and chronic illness through the efforts of the medical profession, as this is not a function of the federal government.
4. To become an integral part of the community and to engage in all civic activities and other non-medical enterprises that will accrue to the benefit of the community.
5. To re-read the Oath of Hippocrates and the Principles of Medical Ethics of the American Medical Association.

Dr. McCormick ended his message by stating that so long as doctors continue to carry on their practices "in accordance with fundamental moral principles, the problems of the profession which sometimes seem insurmountable will be solved in a relatively short time."

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### A TALE OF A CITY—RICHLAND, WASHINGTON

Ten years ago there was no Richland, Washington.

The area on which this modern city was built in 1944 was a semiarid wasteland in southeastern Washington. Today, it is a thriving atomic-industry city of 24,000 people. Despite the potential hazards of the type of industry pursued, its annual death rate is one-half that of the average for the nation—2.2 per 1,000 population, compared to the national average of 4.4 annually for the same age distribution.

Many factors, one of which is a uniquely planned and integrated health and medical program, are responsible for this record, three Richland physicians wrote in the January 2 Journal of the American Medical Association. The complete, integrated medical services that have been made available include public health, industrial medicine, adequate hospital facilities, general patient care, and voluntary health insurance.

Richland has no medical resources that are not available to the average community, the doctors claimed. The small investment needed for such a health program is within the reach of any American community. Its dividends, in addition to an economic saving of approximately \$750,000 annually, are great reductions in human suffering.

The public health services available to Richland citizens include vital statistics, communicable disease control, environmental sanitation, public health laboratory services, maternal, infant and child hygiene, health education, bedside nursing, school

nursing, mosquito control and welfare services. The annual cost per family for such services, according to the doctors, is \$9.25, or three cents a day. Essentially, they added, there is no medical indigency in Richland.

A good industrial health program has been a tremendous influence on the general health of the community, the doctors pointed out. Its prime objectives are to prevent job-connected and personal illness and accidents and to promote physical and mental health of employees. Disease is detected in an earlier corrective state through preplacement and periodic examinations.

Assistance and advice on matters of personal hygiene, emotional disturbances and personal illness are given employees. The results are a decrease of about one-half the national average of absenteeism among employees, increased employee efficiency, and a decrease in turnover. The resultant savings of industry from these factors paid for the medical program, the doctors said.

A 106-bed hospital, which is the center of medical activities in the community, also has helped Richland to obtain its fine record, the doctors wrote. Approximately 90 per cent of the residents of the city are covered by prepaid hospital and medical-surgical insurance. More persons entered Richland's hospital than was average for the state, but the length of time each patient spent in the hospital was almost half that of the state's average.

There has been "no maternal death" in Richland in more than 6,000 deliveries; infant deaths have averaged a low 16.5 per 1,000 live births during the last five years, and the hospital death rate has been 0.35 per cent.

Selection of persons to work in Richland's industry appeared to have little effect on mortality rates, the doctors claimed. Persons were recruited for the project from all walks of life and every state in the union. Because of a tight labor market, many persons were employed who ordinarily would have been considered unfit from a physical standpoint. Many physically handicapped persons were placed on jobs commensurate with their physical limitations.

"In the search for more satisfactory health for their people, many nations of the world have turned to socialized medicine," the doctors stated. "Strenuous efforts to socialize medicine are being made in this country, even though the United States enjoys the

finest health of any large nation in the world. The answer to much of the socialized medicine problem lies in sound community health planning, participated in by all elements of the community. National health is simply the sum total of the health in all local areas. American initiative and ability applied at the local level should prove far more effective in providing good health and good medical care than a regimented national program, supported by higher and higher taxes."

Richland, Washington, has shown what can be done.

The report was made by Drs. William D. Norwood, Philip A. Fuqua and Ralph R. Sachs.

Richland was built to house the workers of the secret Hanford Works, which was to produce plutonium for atom bombs. The town and plant were built and operated by the duPont Company for the U. S. Army, and later the program was turned over to the General Electric Company, which now operates it for the U. S. Atomic Energy Commission.

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#### ADULT UNDERSTANDING OF CHILD ACCIDENT PROBLEMS NECESSARY

It's the adult's job to prevent childhood accidents.

As children do not always conform to the practices that would insure their greatest safety, adults must be made to understand the accident problem of children and must be as concerned about it as they are about childhood diseases, it was stated editorially in the January 2 Journal of the American Medical Association.

"A notable decrease in infant mortality and in the death rate from childhood diseases has been brought about by the nation's physicians during the last half century," the editorial pointed out. "However, despite the efforts put forth by the medical profession to protect the country's future citizens, childhood mortality continues high because of accidents—accidents that, for the most part, are preventable.

Only by the understanding and cooperation of adults can the toll of childhood death and disability due to preventable accidents be cut, the editorial stressed. It urged physicians to take the initiative to instruct parents and school personnel, specifically, and the entire community, generally, in childhood safety problems.

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## SOME PROBLEMS OF PROSTATIC SURGERY

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Among the advances of surgery that have marked this century there have been fresh triumphs in rapid succession in our treatment of lower urinary tract disorders. At the outset I wish to emphasize that we owe much to the marvelous inventions of physicians and pharmacists who have given us the group of remedies spoken of as wonder drugs.

The fundamental principles which are carried out in the management of a patient with prostatic obstruction have helped prostatic surgery to become better and safer each year. It is most important to take a careful history, and carry out a complete general examination in order to assay the patient's condition, to evaluate renal damage, and to detect the presence of associated disease, especially of the cardiovascular system. Blood examinations, including non-protein nitrogen estimations and Wassermann reactions, are done to supplement, not replace, clinical investigation.

In all cases where infection of the brain and spinal cord is demonstrated we are on the alert for the tabetic type of bladder which might offer a confusing picture with its attendant atonic distention. Where asymptomatic latent syphilis is present we recognize no contraindication to prostatic surgery, neither do we insist on preoperative antiluetic medication.

The present-day success in the treatment of these patients is due to the proper recognition and handling of geriatric and cardiovascular problems as well as to improved surgical management. Great care must be

used in making our rectal examination in patients suffering with prostatism, and if we try to evaluate the size of the gland we must do so in exact terms. This requires great care and precision in making the detailed examination. When one speaks of a small, medium or large gland, just what does one mean? To aid us we use a urethrogram, cystoscopic examination, and rectal palpation of the gland with the cystoscope in place. A flat KUB is made and any other roentgenography which is thought necessary.

Rectal examination is simple but subtle. One's sensory study should elicit a compound of tactile evidence. To rush in and rush out is indecent folly. It is very necessary to understand the pathology of the obstruction, as far as the present state of knowledge permits. The fact that our knowledge of the pathology is incomplete is emphasized by the multiplicity of the terms commonly used, namely: enlarged prostate, senile enlargement of the prostate, hypertrophy of the prostate, hyperplasia of the prostate, adenoma of the prostate and adenomatous enlargement. All these terms express the idea of a prostate larger than normal, but indicate that the cause of the change still eludes us.

Enlargement of the prostate is common but by no means universal. Statistics indicate that it occurs in 20 to 30 per cent of the aging male community. Further, they suggest that when it occurs it is not necessarily progressive but may reach a peak and then remain static. Not all individuals affected with enlargement necessarily develop gross symptoms. These occur in 50 per cent of those affected. It is to be remem-

bered that atrophy of the prostate may occur in the elderly, that is to say a reduction of the weight of the prostate to below 13.5 grams, the normal weight. Experience will bring out two signal facts: important bearing of available data on diagnosis, operation and follow-up of prostatic disease, or our findings may be fallacious and deceive the very alert, especially if the bladder is distended at the time of examination.

Only when there is evidence of renal insufficiency, when the patient is febrile, when the bladder is grossly overdistended, or when there is serious associated disease do I carry out preoperative preparation. If drainage is necessary, a catheter is passed, all urine drained off, and the catheter left in. I admit that there are risks in doing this, but they are incidental to disturbing the very abnormal balance to which the patient has become accustomed, and it cannot be avoided by gradual decompression. I have never practiced gradual decompression, and it never was practiced in my intern days. I have never seen a case of suppression of urine followed by rapid emptying of an overdistended bladder.

The size of the gland bears no relation to the degree of urinary obstruction, and it is common experience to find a gland of considerable size without associated residual urine or involvement of the upper urinary tract. An enlargement requiring surgery is not determined by rectal palpation alone. We are of the opinion that prostates are toxic when enlarged, in the same manner that goiters are toxic. We have no way at present to measure this toxicity, or to find out if it is present in every case, but if by surgery we remove this toxic property, allowing nature to stabilize, and the patient is able to void boldly, thereby emptying his bladder in peace, much has been accomplished and the patient and his family are happy.

What are the indications for active treatment? They may be summarized as a residual urine of over two ounces, obvious difficulty in micturition, an attack or repeated attacks of retention and changes in the upper urinary tract, and marked general toxicity from an enlarged gland with or without urinary retention, or upper urinary tract findings. The investigation of the residual urine should be made on more than one occasion, as there may be variations depending on the length of time the urine has

been retained prior to the investigation. If the bladder has been allowed to become overdistended, an abnormally high figure may be obtained. A reasonably efficient method, which has much to be said for it, is examination by intravenous pyelography, bladder pictures being taken before and after micturition. In this method the risks of catheterization are avoided, and an assessment of the upper urinary tract made at the same time. It is not sufficiently appreciated that acute retention complicating an enlarged prostate is a surgical emergency as real as acute intestinal obstruction, or the perforation of a peptic ulcer. By catheterization we may meet the emergency, but lead to the prolonged invalidism of the patient by the initiation of bladder sepsis. In such a case the ideal treatment is immediate prostatectomy, unless the cardiovascular system or renal impairment precludes it.

Only a few patients do not measure up to a suitable physical status for some type of operative correction of bladder neck obstruction. We give due consideration to any coexisting vesical or systemic disease. Many of the older men have periods of being irrational but this condition is usually only temporary and of no serious consequence. The insane patient offers an entirely different problem. He might not be a too excited type but postoperatively he invariably becomes violent, taxing his own strength and that of the hospital personnel.

Alkaline and acid phosphatase studies are made routinely. So far our experience has not made us too enthusiastic over a gland being benign or carcinomatous from the result of such studies, possibly because we believe that the most reliable means of diagnosing carcinoma preoperatively is the examining finger. We recall one case where the finger in the rectum felt as though it were in a keg of bolts. A proctologist was called in to get a load of this feel. We both agreed that here was one case that was carcinomatous. After surgery the pathologist handed us a benign report.

The importance of treatment of prostatic obstruction is emphasized by the five different surgical procedures which are in vogue today for relieving the obstruction caused by the pathologic gland. We are willing to assume that any urologist, especially any young urologist with the necessary skill to do major surgery, may master the technique of any of these procedures.

It is believed by most urologists that when prostatic surgery is performed by competent men the various operative procedures carry about the same operative mortality, and each will relieve the symptoms caused by the obstruction, be it transurethral resection, or by perineal, suprapubic, retropubic, or possibly infrapubic enucleation. We have gained no appreciable ground in our efforts to avert prostatism. Likewise the process is apparently irreversible by physical, chemical, or biologic means.

The young surgeon beginning transurethral removal of the prostate will probably rupture a few bladders, or perhaps make a few overenthusiastic extirpations of tissue, which may contain some of the vesical sphincture, but even this should not be an indictment against this valued method of attacking the enlarged prostate gland. The perineal operator will end up in the rectum more than once, or have a persistent perineal fistula, but as his knowledge of the technique of this approach increases, his mishaps will be fewer and less damage will exist. Likewise, the surgeon proceeding transvesically may open the peritoneum or be the cause of a profuse hemorrhage. The proponents of the retropubic approach, as brought out by Millan, will not escape similar dangers before they become proficient in this technique, neither will the infrapubic route be free of danger to the neophyte.

In treating the geriatric patient who is suffering from prostatic pathology the passage of urethral instruments and catheters must be very gentle and without trauma. The passage of a catheter is not gently done in many cases, and trauma of even great magnitude can result in the not too gentle manipulation of urethral sounds, cystoscopes and even catheters. One of our cases came in with a history of having had a metal catheter passed without results in emptying the bladder of urine. We found that the urethral instrument had tunneled through a carcinomatous prostate gland. We were met in the hall of one of our hospitals one day by a colleague who told us he had just had the experience of massaging per rectum the prostate of a patient suffering with prostatism and his finger had penetrated the bladder cavity. Both of these cases were handled gently, but not gently enough.

The case presenting must be given the type of operation which will give the patient the best and most lasting result. Prostatic

symptoms per se should not be the sole factor in the choice of method of operative intervention. The operator's knowledge of gross and microscopic anatomy and his skill in any one or all of the methods of surgical approach, with the differentiation of the type of symptoms, added to the evaluation of associated vesical and systemic disease, are the positive factors to be considered when deciding the particular type of operation in a given case. Therefore a good urologist must be master of all techniques. For most of us it is harder to become a good resectionist than to use any of the other approaches, and suprapubic transvesical enucleation is probably the easiest. This is as it seems to me. Others may differ with this opinion, as all of us do not look at things through the same window.

The best chance to prevent the necessity for the later use of sounds, instillations or irrigations, or even a second operation, is by the execution of the proper operative technique in a given case, thereby giving the patient the ability to void freely, boldly, and without pain. This is what he desires, and he has little concern about how we approach the job of getting him well. His hope is to live through the operation, and next in order he hopes to be cured.

It is stated by some in the literature that late recurrent or persistent obstruction to the urinary outflow will be found more frequently after transurethral resection than in other procedures. This has not been the case in our hands. We are of the opinion that more recurring cases would be met with if the patients lived ten or twenty years after surgery. One of our cases consulted us at age 73, with nine ounces of residual urine. Nine years previously this patient had been operated on for a right-sided inguinal hernia which came down on him as he was being taken out of the ambulance and put to bed at his home from the hospital. When we saw him this was a grade iv irreducible hernia. We elected to do a suprapubic enucleation of the gland, and leave the hernia alone. Eleven years later the patient, at the age of 84, came to us with urinary frequency, and a sound (28 F. Walther) could be passed but met with some resistance at the vesical neck. During our work-up, urinary retention developed and 2200 cc. of residual urine were found. He again entered the hospital and we elected to do a transurethral resection, removing sixty

grams of tissue, mostly from a very large and smooth right lobe. Catheter was removed on the third postoperative day and the patient was able to void, urine getting all over his enlarged scrotum. He was catheterized every eight hours and no less than 300 cc. of urine obtained at any catheterization, so we decided upon another resection. Forty grams of tissue were removed at this time, and the patient left the hospital on the eighth postoperative day following the resection.

The pathologist reported an adenomatous prostate, weighing 96 grams, from the first operation at age 73. The tissue from the second and third operations, which you might classify as a two-step transurethral resection, weighed collectively 100 grams. Fifty cc. of residual urine were present when he was allowed to go home for two weeks. He then reentered the hospital for an orchectomy. *The pathologic report on*

*the resected tissue was grade iv adenocarcinoma of the prostate.* At this time the recurrent right hernia was repaired, and both testes removed. Early ambulation was carried out, beginning fifty-four hours postoperatively, and recovery was uneventful. We have seven other cases of recurrent prostatism following enucleation, and the same percentage of recurrences following transurethral resection. We do not think that the type of operation, when properly performed, has very much to do with recurrences but rather that Father Time, in his own way, handles these and all other prostatic enlargements.

These patients are fast approaching three-score-and-ten, or have passed this allotted time, so late results and five-year cures lose most of their glamour, regardless of how well the statistics are analyzed or approached.

303-304-305-306 Van Antwerp Bldg.

## COMPLICATIONS OF CHICKENPOX

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As a rule, chickenpox provokes little interest among the laity or the medical profession because it is considered a benign disease. It is the purpose of this paper to refute this idea by reviewing and emphasizing various complications of varicella which have been encountered recently. No attempt will be made to indicate the frequency of such complications as mild cases are usually not seen or reported.

### NEUROLOGIC COMPLICATIONS

*Case 1.* A 5-year-old colored female was admitted to Baptist Hospital in coma. History revealed that she was well and had played in the yard the previous day. On the morning before admission she was found comatose in bed, showed no response to stimuli, and remained in this condition until she was brought to the hospital. No exudate was found on the bed which might have indicated the occurrence of a convulsion prior to the onset of the coma.

Past history was negative for similar episodes. She had had pertussis at 3 years of age and chickenpox 2 weeks before admis-

sion. The course of chickenpox had not been remarkable and medical attention had not been sought. She had some fever the first day of illness. A sibling had chickenpox at the time of her admission.

Examination revealed a comatose colored female on whose skin were scattered scars compatible with healed chickenpox lesions. B. P. 88/0; P. 110; R. 20; T. 102. Except for the coma and a mild pharyngitis the abnormal features were limited to the nervous system. No nuchal rigidity could be demonstrated. The corneal and abdominal reflexes were absent. The reflexes of the upper extremities were sluggish; those of the lower extremities were completely absent. She did not respond to stimuli, and was incontinent of urine and feces.

Laboratory work revealed a red cell count of 3.7 million with 11 grams of hemoglobin, 22,750 leucocytes with 85 per cent neutrophils, 3 per cent monocytes and 12 per cent lymphocytes. No sickling was demonstrated. A urinalysis showed a specific gravity of 1.014 with no albumin and sugar demonstrated. The acetone test was strongly positive. On examining the spinal fluid, the pressure was found to be normal. Eight

cells were present. Of these, 5 were polymorphonuclears and 3 were lymphocytes. The sugar was 71 mg. per cent and protein 14 mg. per cent. Colloidal gold test was 2221100000. Cultures of the blood and spinal fluid were negative. The serologic test for syphilis was negative.

Course: No specific therapy was ordered. The morning after admission she could be aroused, recognized her mother, and was able to take fluids orally. One day later she knew she was in the hospital, recognized the doctors and nurses, and could sit in bed. By this time sphincter control had returned and all reflexes had improved considerably. The following day she was able to walk without support, and rapidly made an uneventful recovery.

Case 2: A 19-month-old white male was admitted to Children's Hospital because of inability to walk. History revealed that his development and physical condition had been normal until 6 weeks before admission. At that time he developed a typical case of chickenpox and shortly afterwards complained of pain in both knees. About the same time he became unable to walk. Subsequently, he was seen by an orthopedist who referred him to the hospital for diagnostic studies.

Examination revealed skin lesions which conceivably could have represented chickenpox scars. The inability to stand was confirmed, and was due to generalized weakness of both lower extremities. The right leg and knee were more severely involved than elsewhere. No sensory changes were demonstrated, although he continued to complain of some pain in his legs. The laboratory work, as well as x-rays of the lower extremities, were not of diagnostic significance. Clinically, it was felt that this patient was an example of post-varicella myelitis. Symptomatic therapy was advised and the patient gradually improved.

Case 3. A 1-year-old white female was admitted to Children's Hospital with history of having been ill one day. At the beginning of her illness she developed skin lesions typical of chickenpox. Later, during the same day, she developed high temperature, and had a generalized convulsion which continued, in spite of anticonvulsive measures, until the time of admission. Past history revealed that she had been a full term baby with no illnesses prior to onset

of present difficulty. She had received routine immunizations.

Physical examination revealed an acutely ill, slightly cyanotic, comatose and moderately dehydrated white female. The temperature was 106.4 degrees, pulse 155, and respirations 65 per minute. Scattered over the skin were lesions typical of varicella. The fontanel was depressed. No nuchal rigidity was present. The pupils were pin point in size and a moderate pharyngitis was present. Respirations were shallow and rapid. All extremities were flaccid. The deep reflexes were not detectable.

Laboratory work on admission revealed red blood count 4,420,000, hemoglobin 11.4 grams, white blood count 11,650, with 79 per cent neutrophils, 18 per cent lymphocytes, and 3 per cent stabs. The urine showed a trace of albumin, 2 plus acetone, and an occasional white blood cell on microscopic examination. Spinal fluid examination revealed a normal pressure. There were 38 cells present, of which 36 were lymphocytes and 2 polymorphonuclears. The protein was slightly elevated to 52 mg. per cent. Culture of spinal fluid was negative.

Course: The following day she appeared less comatose and better hydrated, but the reflexes were still absent. Her respirations improved, but periodically she would have convulsions of a few minutes duration, only to be followed by periods of respiratory difficulty. In spite of intensive chemotherapy, antibiotics, anticonvulsive measures, antipyretic measures, fluid therapy, and supportive treatment, she died following a period of respiratory difficulty on the fourth day after admission. An autopsy was not permitted.

Comment: It is obvious from the examples reported that chickenpox is not an innocuous disease. These examples emphasize that neurologic complications can occur anytime during the course of the disease, varying from within a few hours of the onset to several days afterward. The spinal fluid findings may be normal or may show non-specific changes, such as increased cells and protein as found in Case 3. The patient in Case 1 illustrates the suddenness with which the coma of encephalitis can occur, the immediate problem imposed in the differential diagnosis, and the rapidity with which the severe symptoms abate.

The second example demonstrates that ascending or transverse myelitis can be caused by the virus of varicella without producing severe systemic reactions. With asymmetric muscular involvement and painful extremities, a diagnosis of paralytic poliomyelitis could be entertained without the history of varicella.

The third case represents a fatal example of the encephalitic type. The complication developed soon after the beginning of the varicella eruption, and was characterized by almost continuous convulsions. In reviewing many of the case histories of varicella encephalitis reported in the literature, one gains the impression that the nearer the encephalitic signs develop to the onset of the eruption, the more unfavorable the outcome is likely to be.

#### EAR AND ORAL COMPLICATIONS

*Case 4.* One example of severe bilateral otitis media, associated with a temperature of 105° for 3 days, was encountered recently in a 2-year-old child. Her response to antibiotic therapy was excellent.

*Case 5.* A 4-year-old female was seen because of temperature of 103° and sore tongue. Her skin lesions were found healing satisfactorily but she had a severe glossitis with the tongue swollen twice its normal size. A heavy, thick, whitish coat covered the entire tongue. There seemed to be an overgrowth of filiform papillae, giving, somewhat, the appearance of the hairy tongue described as complicating antibiotic therapy. Antibiotics had not been used. The blood count was not remarkable. Smears of the glossal surface showed clusters of coccal organisms but no yeast, molds or fungi. Aureomycin was prescribed and the symptoms rapidly subsided.

*Comment:* Such an example has not previously been encountered by the author; nevertheless, it emphasizes the tendency of varicella to involve epithelial structures throughout the body.

#### VISCERAL MANIFESTATIONS

Occasionally varicella gives rise to visceral complications such as pneumonitis and nephritis.<sup>1</sup> Several instances of pneumonitis have been reported. All have been typical of the virus type of pneumonitis. Brief

mention is made here of a 4-year-old white male, *Case 6*, who was seen at the height of his varicella skin lesions because of a temperature of 105° for 2 successive days. Examination revealed, in addition to typical chickenpox lesions, dulness and tubular breath sounds over the left lower chest. A roentgenogram confirmed the presence of lobar pneumonia. The white blood count was 40,000, with 95 per cent neutrophils. With antibiotic therapy the consolidation resolved without forming empyema.

*Comment:* The pneumonia in this boy was probably incidental and was not caused by the varicella virus as it in no way resembled the virus type of pneumonitis described in the literature as being associated with chickenpox. The clinical response to therapy was characteristic of pneumococcal infection.

#### DERMATOLOGIC COMPLICATIONS

The most frequently encountered complications were those involving infections of the skin. The lesions varied from ulcerated pustules, areas of pyoderma, and impetigo to erysipelas. Eight of these were sufficiently severe to warrant parenteral antibiotic therapy. One 4-year-old boy, *Case 7*, was seen because of secondary infection of many varicella lesions. In addition, he had a severe perianal herpetic dermatitis composed of many vesicles. These were present as far up the anorectal region as it was possible to see and, apparently, were herpetic in type as they dried up without going through the pustular and crusting stage which characterized the other lesions. In the case reported by Oppenheimer,<sup>2</sup> involvement was found throughout the gastrointestinal tract, and it is entirely possible that the herpetic lesions in the above case were more extensive than was possible to demonstrate.

The following example of erysipelas is reported in more detail: *Case 8.* A five-year-old white female was admitted to Children's Hospital with history of having had chickenpox for 4 days. The temperature during this interval had not exceeded 102° until the afternoon of admission when it became elevated to 105 degrees. Examination revealed lesions of varicella scattered over the body. In addition, a typical area of erysipelas in-

1. Frank, L.: Varicella Pneumonitis, Arch. Path. 50: 450-456 (Oct.) 1950.

2. Oppenheimer, E. H.: Congenital Chickenpox with Disseminated Visceral Lesions, Bull. Johns Hopkins Hosp. 74: 240-250 (April) 1944.

volving the entire anterior surface of the right thigh was present. A smaller, but similar area was present over the right shoulder. The right inguinal lymph nodes were enlarged and tender.

The red cell count was 4.1 million, hemoglobin 12.4 grams, white cell count 17,150, with 71 per cent neutrophils, 2 per cent stabs, and 27 per cent lymphocytes. The urinalysis was negative.

Hospital course: With antibiotic therapy the temperature fell to normal in 3 days. The affected area gradually faded except for a small area of suppuration which occurred near the center. This apparently represented the site of a pock where the etiologic organisms had entered the skin.

#### SUMMARY AND CONCLUSIONS

A number of examples of complications associated with chickenpox have been reviewed, including one fatal case of encephalitis.

litis. Evidence is presented in the various case reports to show that the disease is capable of involving any epithelial surface, as well as causing systemic involvement. A brief discussion of the various types of complications has been included. No attempt has been made to indicate the frequency of such complications.

The possibility that the natural course of chickenpox during the past two years has been more severe than that seen in previous years cannot be denied. Whether this is due to the indiscriminate use of antibiotics or whether the pathogenicity of the varicella virus has increased in recent epidemics cannot be stated at this time.

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Note: Appreciation is expressed to Dr. Hughes Kennedy for permission to publish one of his cases, and to Dr. Clyde Brown for referring one case.

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## CHRONIC PYELONEPHRITIS

ROBERT LICH, JR., M. D.  
Louisville, Kentucky

Pyelonephritis is caused by a bacterial invasion of the kidneys and their contiguous ductal systems. It is the most common disease of the kidneys and potentially is profoundly serious. The term pyelonephritis or pyelitis encompasses a wide orbit ranging from the pyelitis of childhood to the contracted functionless kidney of mid-life. These inflammatory lesions of the kidney have always been important, but with the advent of specific antibacterial therapy, modern urinary tract surgery, and certain newer concepts and knowledge of renal physiology we are afforded the opportunity to control and correct many of these processes which heretofore have resulted in economic incapacity of the individual or even premature death.

The purpose of this paper is to discuss pyelonephritis in its various stages, with particular reference to its therapeutic regimen. Therapeutically, pyelonephritis pre-

sents three separate but interrelated problems: (1) acute pyelonephritis, (2) chronic pyelonephritis, and (3) obliterative pyelonephritis with renal failure.

The kidneys are subject to bacterial invasion by three routes: (1) ascending, via ureter and renal pelvis; (2) lymphatic, periureteral and peripelvic, and (3) hematogenous. Much is still to be known about the mechanism of the kidney infections and there is not sufficient time here to go into this problem. Suffice it to say then that renal infections must be occasioned by either an overwhelming bacterial invasion, or the kidney is rendered susceptible to infection by some disturbance which primarily interferes with the hydrodynamics of the urinary tract and secondarily causes morphologic changes. For example, it is generally agreed that pyelonephritis is twelve times more commonly associated with hydronephrosis, and this group constitutes the type of infection that is not usually hematogenous in origin.

The more frequent causes of hydronephrosis may be listed in the following manner:

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Clinical Professor and Chief of the Section on Urology, Department of Surgery, University of Louisville School of Medicine.

Guest Speaker, Gulf Coast Clinical Society, Mobile, Alabama, October 15, 1953.

*Male*

- Prostatism
- Cancer of the prostate
- Cancer of the bladder
- Urinary calculus
- Ureteral stricture
- Urethral obstructions
- Spinal cord injuries
- Congenital paralysis

*Female*

- Carcinoma of the cervix
- Pregnancy
- Ureteral stricture
- Urinary calculus
- Cancer of the bladder
- Urethral obstructions
- Congenital paralysis

Pyelonephritis *per se* is a serious condition, but it is quite apparent from the above list that the underlying cause is often even more formidable and demands therapy with an urgency that exceeds the symptomatic implications. The necessity of early accurate diagnosis is obvious.

FIGURE 1

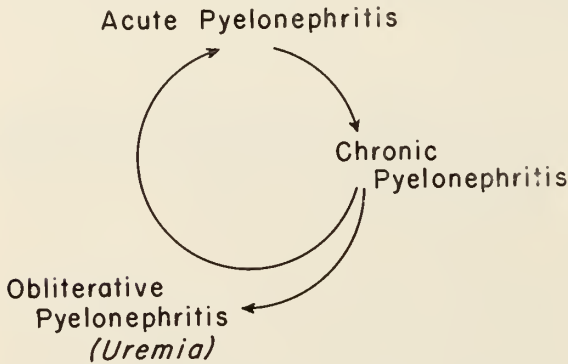


Figure 1 demonstrates the relationship between the various types of pyelonephritis when a therapeutic classification is considered. Acute pyelonephritis may become chronic and by the usual definition is so designated if the infection persists for more than four months. The chronic stage may continue its activity for a variable period of time or subside only to recur with symptoms resembling an acute stage of this disease, and this may recur repeatedly. Or the chronic pyelonephritic lesion may quietly smolder without obvious symptoms and result in a chronic obliterative pyelonephritis with compression and distortion of the drainage portion of the calyceal system. If the infectious process continues, renal failure may develop without untoward symptoms.

Acute pyelonephritis usually manifests its appearance by sudden, generalized toxic-

ity, renal tenderness, and bladder distress. The urine is loaded with pus and possibly a few blood cells. Let us not forget, however, that early in the disease pyuria may be absent. The hemogram shows evidence of an acute infectious process and the leukocyte count is usually in the neighborhood of 13,000 cells, with the polymorphonuclear cells representing between 80 and 87 per cent of the leukocytes present.

Chronic pyelonephritis has been defined as any instance of pyelonephritis that has persisted or recurred during a period of four months or longer. In this group, particularly, it is mandatory that a meticulous urologic survey be undertaken. This study must include pyelography in addition to functional studies of the kidney, renal pelvis, ureter and bladder. Any urinary tract abnormality must first be corrected surgically before specific antibacterial therapy can be expected to be of value.

The medical treatment of pyelonephritis requires that the organism be determined and its sensitivity to the various antibacterial agents demonstrated. In this way the causative organism can be effectively treated and a permanent cure anticipated. Three successive negative urine cultures during a ten-day period is considered a satisfactory measure of therapeutic success. When urine cultures are impractical, we employ stained, centrifuged urine sediment (obtained by catheter in the woman and the second urine glass in the male) at intervals of five days for normal microscopic findings on three successive trials and, in addition, a monthly specimen for three months. These criteria have been found to be simple, inexpensive and accurate.

In our experience we have found the following drugs and combinations to be the most specific for the organisms tabulated.

<i>Bacteria</i>	<i>Drug</i>
<i>E. coli</i>	Sulfonamides
	Terramycin
	Aureomycin
<i>A. aerogenes</i>	Streptomycin
<i>Ps. aeruginosa</i>	+
	Sulfonamides
<i>Staphylococci</i>	Penicillin
<i>Streptococci</i>	
<i>Str. faecalis</i>	Mandelic acid
	Aureomycin
<i>B. proteus</i>	Chloromycetin
	+
	Sulfonamides

It is not to be forgotten that certain drugs are much more effective in an alkaline urine (sulfonamides and streptomycin) and others in an acid medium (penicillin). Aureomycin, Terramycin and Chloromycetin are all primarily effective in an acid medium, but these drugs spontaneously produce an acid urine so that specific steps toward urinary acidification are not necessary.

On occasion we have found it impossible to obtain the urine free of infection, but if small doses of the drug are continued the patient is kept clinically well. For example, we have had a few elderly patients on one-half to one gram of sulfonamide daily over a period of years during which time they have been asymptomatic and there has been no evidence of drug intoxication. In short, kidney infection must be controlled at all costs for it is this group of patients that can quietly develop renal failure with irreversible functional changes.

It is this latter group of patients with renal failure that we wish to discuss concerning their therapeutic management. Renal infection is usually minimal or entirely burned out and has left a scarred remnant of a once physiologically intricate organ. The electrolyte balance of the body, which is the responsibility of the kidney, is wrecked and unless it is returned and maintained near normal death is inevitable. The fundamentals of electrolyte replacement therapy are simple and the vast majority of these patients can be treated in the average hospital with ordinary laboratory facilities. To be sure the occasional patient may present problems that become complex and require more technical equipment and experience, but this is not unlike other aspects of therapeutic medicine.

The signs and symptoms of renal failure may be bizarre, reflecting the degree and speed with which the electrolyte imbalance has taken place. If the process has been gradual the symptoms may be minimal and indefinite in spite of the fact that marked alterations in the electrolyte pattern and azotemia exist. The abnormal findings in the blood and urine are listed below:

#### Blood

1. Normal protein content
2. Electrolyte changes
3. Reduced  $\text{CO}_2$  combining power (lowered pH)
4. Anemia (depending upon the activity of the infection)
5. Azotemia

#### Urine

1. Specific gravity—fixed below 1.015
2. Microscopic examination—  
Pus depending upon activity of the infection  
Casts, rarely found
3. Chemical  
Albumin, less than 1+ or heavy trace  
Sugar, negative

The reasons for the various urine and blood findings assist in a better understanding of the therapeutic problem and thus they will be briefly discussed.

*Fixation of the specific gravity of the urine:* This is due primarily to tubular dysfunction so that the concentrating and reabsorptive power of the kidney is reduced. By the same token the variation in the extracellular electrolyte picture is a manifestation of tubular dysfunction.

*Relative absence of casts in the urine:* The glomerular histologic picture in pyelonephritis is that of hyaline degeneration and non-function. Hence, little or no fluid is filtered to run into the tubule and wash out the albuminous or cellular material that may accumulate in the tubule which normally forms a cast.

*Albumin of less than 1+ is occasioned by the fact that the glomeruli involved lose their power of filtration and thus do not permit albumin in the plasma to escape in the urine in large quantities as is true in glomerulonephritis. The lack of albumin in the urine accounts for the relatively normal protein picture in the blood of the pyelonephritic patient.*

*The reduced  $\text{CO}_2$  combining power of the blood is due to the reduced  $\text{H}^+$  excretion in the distal tubule whenever there exists an excess of cation in the tubular urine. In this instance more chloride is reabsorbed into the blood and consequently bicarbonate reabsorption declines.*

*Azotemia is a manifestation of the diminished filtration of urea, creatine, creatinine, uric acid, amino acids and various unknown nitrogenous compounds.*

*Anemia is the reflection of the infectious activity.*

In renal insufficiency what are the significant extracellular manifestations? Certain substances are increased and others diminished. The principal changes are listed as follows:

Decreased	Increased
1. Water	1. Organic acid
2. Plasma volume	2. $\text{PO}_4^{=}$
3. $\text{Na}^+$	3. $\text{SO}_4^{=}$
4. $\text{Cl}^-$	
5. $\text{K}^+$	
6. $\text{Ca}^{++}$	
7. $\text{BHCO}_3^-$	

The normal kidney must under normal metabolic conditions eliminate 35 grams of solids per day and much more during increased metabolic rates; such as, fever and other destructive conditions. The normal kidney requires 15 cc. of urine for each gram of solid to be eliminated or 500 cc. of urine to eliminate 35 grams. However, if the kidney is incapable of concentrating the urine beyond 1.010 to 1.015 it will require more than twice that volume of urine to excrete 35 grams of solid or approximately 1100 to 1400 cc. of urine. This increased requirement must be satisfied to prevent dehydration. Since a 1000 cc. fluid loss daily through the skin, lungs and bowel is to be expected, it is apparent this patient must take in excess of 2500 cc. of fluid each day to maintain a normal water balance. In renal disease our greatest and most consistent loss in the extracellular fluid compartment is water and its replacement and maintenance are essential.

A normal plasma volume depends upon adequate hydration and a normal electrolyte pattern since the protein compartment in pyelonephritis is seldom disturbed.

The most important electrolyte variation is that of salt. Early in renal disease there may be salt retention and it is this fact that gave impetus to the popular low sodium diets which have, by and large, been greatly overdone. However, late in renal disease there is a salt loss to the extracellular space and edema is not uncommon. The diminished plasma salt level causes rather vague

and indefinite symptoms although usually they present a recognizable pattern (Figure 2). When the salt loss is sufficiently great there occurs the vicious cycle of anorexia and nausea, further salt loss, vomiting and the entire cycle repeats itself again and again.

On the other hand, if there is an excess of salt the disturbed kidney may be unable to excrete the salt and its accumulation in the extracellular spaces attracts water to form edema. In spite of the edema, fluid must be forced to wash out the sodium and reduce the possibility of further tubular sodium reabsorption. If acidosis is not present (as determined by the carbon dioxide combining power of the blood), the use of ammonium chloride, 9 grams daily for three days with a rest period and then repeated, will dispel the edema. The ammonium chloride induces a temporary acidosis and the sodium base is drawn from the extracellular space to excrete the excess acid and abolish the acidosis. This procedure induces a marked fluid loss through the kidneys and the plasma volume may be reduced unless an adequate fluid intake is maintained in spite of the edema. After the disappearance of the edema the amount of sodium chloride permissible for any individual patient is determined by trial and error until the tolerance of the individual is established.

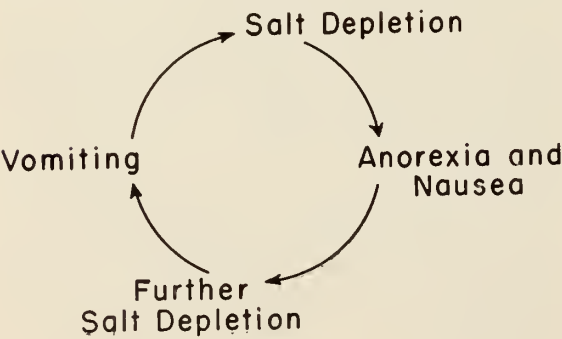
In regard to blood chloride values it is important to remember that excess chloride resides in the tissues so that blood chloride studies do not give an indication of chloride excess. A deficient chloride blood level may be replaced parenterally by the use of calcium chloride (1%), sodium chloride (0.8%), or ammonium chloride (1%).

Potassium is usually diminished in renal insufficiency whenever the urine volumes are normal in the presence of acidosis. For this reason buffered potassium phosphate should be added to the electrolyte repair solution. It is to be emphasized, however, that in instances of diminished urine output the potassium level may be increased, and potassium added to solutions in this situation might prove fatal. In potassium depletion the repair solution of choice is one in which there are relatively more sodium cations than anions; i. e.,

1/2 5% glucose with normal saline

1/2 1/6 molar sodium lactate buffered potassium phosphate (70 mEq.)

FIGURE 2



Calcium loss in far advanced renal disease is common and may lead to muscle cramps, muscular twitching of the face, and possibly tetanic convulsions. Calcium and phosphorus levels in the extracellular fluid are inversely proportional; i. e., if calcium is high phosphorus is low. Hence, to avoid hypocalcemia, aluminum hydroxide gel is used to bind the phosphorus in the bowel and thus keep the calcium content of the blood at a more nearly normal level. The calcium level may be further increased by calcium gluconate or lactate given orally in doses of 1 to 2 grams four times a day.

With evidence of acidosis as determined by the serum carbon dioxide combining power the patient may be treated with sodium bicarbonate (5 per cent intravenously or 40 to 80 grains daily orally). The use of the solution outlined under potassium deficiency for intravenous administration is excellent though the added potassium should not be given oftener than every other day. The daily use of bicarbonate in the routine management of a patient with renal insufficiency should not be forgotten, for this, coupled with ample hydration, will aid greatly in maintaining a patient in relative health and comfort.

Another consideration is the patient with a depressed serum carbon dioxide combining power associated with Kussmaul breathing. The laboratory indication of acidosis is in error since the patient is actually in alkalosis which could easily be demonstrated with a blood pH. This paradoxical state can occur by hyperventilation, overtreatment of acidosis, or prolonged periods of vomiting. Alkalosis is best treated with the intravenous use of 0.8 to 1 per cent ammonium chloride to which has been added buffered potassium phosphate.

In brief then, what are the essentials in managing a patient with an adequate urinary output who is in a severe chronic state of renal insufficiency?

1. Follow the patient's serum chloride and  $\text{CO}_2$  combining power values closely. If hypochloremia develops correct it with sodium chloride, and if there is evidence of acidosis reestablish normal values with sodium bicarbonate and maintain these values with daily bicarbonate dosages.

2. Determine repeatedly the specific gravity of the urine to be certain that the patient's daily urine remains well below his

maximum specific gravity. An adequate fluid intake is essential and usually this means an amount in excess of 2500 cc. daily.

3. Aluminum hydroxide gel (1 tablespoonful two or three times a day).

4. Diet is still a disputed point but a restricted protein, high caloric diet has certain logical aspects for its recommendation.

5. Anemia is best controlled by transfusions rather than the use of hematinics.

6. Azotemia can be curbed by the occasional two or three day period of intravenous infusions of 5 per cent glucose in saline with lactate.

It is apparent, in dealing with renal insufficiency, that the best treatment is to avoid its appearance and with its presence the patient should be maintained in a state of normal electrolyte balance which, with a few fundamentals in mind and with a modicum of laboratory facilities, is not beyond the scope of the average physician.

#### SUMMARY

The subject of pyelonephritis has been discussed from the infectious and chemical standpoints. A therapeutic regimen has been outlined to assist in the management of the various stages of pyelonephritis.

801 Heyburn Building

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**Blood Malignancy**—The value of bone marrow studies in leukemia is sometimes misunderstood. This technical aid is being overdone. Bone marrow studies should be made whenever all platelets have disappeared from the circulation, and before splenectomy is to be performed. Smears will also disclose either hyper- or hypoplasia of the elements, and, on some occasions with the appearance of lymphocytes therein, aid in confirming the diagnosis of lymphoid leukemia. On the other hand, bone marrow punctures may be dangerous, and more often than not are poorly done. Several deaths have been reported from accidental cardiac puncture, and infections have followed the procedure. Kracke often questioned the value of marrow studies. He stated that unless a representative segment of bone could be obtained, a true hematologic impression from the marrowgram could not be achieved. For many years marrow smears were made on all necropsies, and metastatic cancer was found in one patient, tuberculosis in a second, and malarial parasites in a third. However, in the leukemias the studies often clouded the issue. Of the patients observed since 1947, in no instance was it felt that bone marrow studies were necessary. As is often the case, leukemic patients become frightened, and rightly so. They go from one specialist to another, until a physician does a marrow puncture and ends up with the same diagnosis that has previously been made.—Norris, J. M. A. *Georgia, January '54.*

## RUPTURED GALLBLADDER WITH RECOVERY

## A CASE REPORT

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Auburn, Alabama

A 30-year-old graduate student was first seen at home on February 5, 1950 (Sunday) at 6:30 a. m. with pain in the chest and difficult breathing as chief complaints. This pain began at 4:00 a. m. in the upper mid-epigastrium just below the xiphoid process and radiated into the sternum. At this time he was given Demerol, 100 mg., with relief in 30 minutes. He was told to report to the office the next day which he did not do.

He was seen again on Wednesday, February 8 at about 6:00 a. m. with the same complaint. Blood pressure at this time was 200/120 and pulse 100. There was slight generalized tenderness in the abdomen with no localization. He was given Demerol with no relief of the pressure-like pain in the chest. He was then sent into John Hodges Drake Hospital and given morphine sulphate, gr.  $\frac{1}{4}$ , with some relief. His temperature at this time was 97 degrees.

The next morning an electrocardiogram was obtained, and a complete blood count, urinalysis and sedimentation rate done. His temperature rose to 101° during the day, and he continued to complain of some pain in his chest. Physical examination at this time was as follows: blood pressure 180/110, pulse 120, heart and lungs negative, and there was generalized tenderness in the abdomen. EKG was normal, the sedimentation rate 5 mm./hr. (Cutler), and the white count 18,300, with 73% polymorphonuclears.

At 7:00 p. m. on this same day he began to complain of generalized pain in the right lower quadrant. Examination of the abdomen showed slight tenderness in this area with no rigidity or point tenderness. Following this, at about 9:00 p. m., he was given a 1½ gr. Nembutal capsule and went to sleep. At about 12:00 midnight he was awakened from sound sleep with severe pain in the R.L.Q. When seen he was sitting up in bed with cold sweat over his entire body. Blood pressure was 120/60 and pulse 160. He was pale and in severe shock. The abdomen was board-like, with localized tenderness just above McBurney's point. Morphine, gr.  $\frac{1}{4}$ , and Demerol, mg. 100, were administered. After a short while he was moved to the x-ray room where an up-

right film of the abdomen was taken. This was negative for air under the diaphragm. Following this he was given 500 cc. of plasma, and at 3:35 a. m. operation was begun.

Operative note was as follows: Right rectus incision made at first over the right lower quadrant. On opening the peritoneum a brownish colored fluid exuded from the peritoneal cavity. This fluid had no odor. The appendix was examined and found to be normal. The right rectus incision was then extended superiorly. The stomach and duodenum were examined and found normal. The gallbladder was then examined and a small amount of bile was seen to exude from the gallbladder in the superior portion. A gallstone was felt lying in this same area between the gallbladder and the liver. There was a small opening in the gallbladder at this point. The stone was removed. The fundus of the gallbladder was opened wider and two other gallstones removed. A drain consisting of rubber tissue sheet and urethral catheter was inserted. The catheter was pushed into the cystic duct. An attempt was made to close the peritoneum with continuous plain catgut but the sutures tended to pull out. Interrupted through-and-through No. 30 stainless steel wire sutures were inserted through all layers except the skin and subcutaneous tissue. These were tied after pulling them up tight. The anterior rectus sheath was brought together by interrupted 0 chromic catgut as the stainless steel wires did not pull the fascial sheath together adequately. The subcutaneous tissue was brought together with 3-0 plain catgut. The skin was closed with interrupted 3-0 silk sutures.

Following operation he was given 500 cc. of citrated whole blood and placed on penicillin, 100,000 units every 3 hours, streptomycin, gm. 1.8 every 3 hours, aureomycin, 250 mg. every 3 hours, sips of tap water, morphine, gr.  $\frac{1}{4}$  every 3 hours as necessary, vitamin K daily, and Prostigmine, 1/4000 every 3 hours, six times. The patient received glucose, 5% in normal saline, alternating with glucose in plain water intravenously, also Vitadex. He received two more

transfusions of 500 cc. of citrated whole blood.

On February 9 his temperature went to 101 degrees. Pulse remained between 130 and 140. There was a large amount of green bile on the dressing.

On the 12th his temperature went to 103 degrees, and his pulse was 130. Penicillin was then increased to 300,000 units every three hours.

Peristalsis was first noted on the 10th. There was no distention at any time. By the 14th his temperature and pulse were practically normal. On the 20th every other suture was removed and a small subcutaneous abscess was noted in the lower portion of the incision. This was drained on the 23rd and the rubber tissue drain removed. Catheter was left in place, but during the night of the 24th this slipped out completely. He drained slightly from the sinus for several more days but by the time of his discharge from the hospital on the 27th the sinus was completely closed.

Gallbladder series in my office following this did not show any function of the organ. There were no evident stones. Since that time he has had attacks of slight pain in the chest.

In June 1950 a cholecystectomy was done and one stone found in the cystic duct.

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**Anticoagulant Therapy**—The ideal drug for prolonged anticoagulant treatment should be administered orally, be well tolerated by the gastrointestinal tract, be without toxic effect on the parenchymal organs, depress the prothrombin level evenly for prolonged periods, be easily neutralized by available antidotes, and be relatively inexpensive. Heparin and its derivatives are not suitable for prolonged anticoagulant therapy for obvious reasons. Tromexan also is not too useful for this purpose because of its transient effect which causes wide swings of the prothrombin time and necessitates frequent blood tests. Phenylindandione resembles Tromexan in its action but the effect is more prolonged. Both Tromexan and phenylindandione should be given twice daily for their optimum action. This is more cumbersome than Dicumarol and Cumopyran administration, which require only daily dosage. Dicumarol still appears to us at this time to be the drug of choice for prolonged anticoagulant therapy. Cumopyran is almost equally useful for this purpose; however, the prothrombin depression is more difficult to maintain and the effective dosage is more variable. Therefore, the drug requires more careful supervision, especially during the initial period of treatment. It

has been used only when patients became resistant to Dicumarol.—*Eisenstadt and Elster, Texas State J. Med., January '54.*

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**Spinal Anesthesia**—Backache is one of the most common complaints following spinal anesthesia. This may be due to localized trauma at the site of injection, but more probably results from the complete relaxation of the back muscles. These muscles usually protect the ligaments of the back and pelvis against undue stretching and help to preserve the normal lordosis. Under spinal anesthesia this protection is lost, and abnormal strain upon structures not used to it may produce backache in the postoperative period. Placing a small pillow under the back to preserve the lordotic curve and another one under the knees to reduce the ligamentous pull may prevent this complication.

Of maximum importance following spinal injection is the preservation of normal respiratory and cardiovascular physiology. The level of analgesia must be high enough for the surgical procedure, but careful observation must be maintained to see that in this accomplishment there is no respiratory embarrassment or interference with cardiovascular dynamics. This requires the undivided attention of someone who is trained to detect untoward events. It is impossible to predict with any degree of accuracy what level of analgesia may be attained in any given patient with a given drug dosage administered by a given technique. Each patient presents a separate, individualized problem.

If the level of sensory analgesia rises higher than the seventh thoracic segment (level of xiphoid), it is likely that some degree of intercostal paralysis will be present. When the level is to the nipple line (fourth thoracic segment) or higher, respiratory ventilation definitely is diminished. With these conditions, however, the patient may have no complaints, and it will be difficult to notice any objective changes in his respiratory excursions. Such moderate involvement of the respiratory system should not be allowed to remain untreated. Over a period of time, in an insidious manner, chronic anoxia may develop and lead to an acute cardiorespiratory collapse. Adequate arterial oxygen saturation usually can be maintained by administering oxygen to the patient at a rate of 5 to 7 liters per minute by means of nasopharyngeal catheter. It is sound practice to administer oxygen in this way whenever the sensory level rises above the xiphoid, and in all patients over 60 years of age.

An acute emergency exists if the spinal level becomes so high that the patient complains of shortness of breath, becomes restless, and is unable to talk. Objectively his chest fails to expand during inspiration and he begins using his accessory muscles of respiration. Treatment here consists of giving oxygen to the patient by a facemask from an anesthetic gas machine or oxygen tank and assisting the patient's attempts to breathe by manually compressing the rebreathing bag in synchrony with his efforts. This procedure may be lifesaving.—*Stephen et al., North Carolina M. J., Jan. '54.*

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THE MONTH IN WASHINGTON

Although the budget, defense and farm policy are monopolizing Washington headlines, Congress is paying more than casual attention to the health and social security fields. In these, as in other legislative areas, it has for its guidance a specific program, laid down by President Eisenhower in his various messages during the first few weeks of the session. The question now is whether this closely-divided Congress will have the time and/or the inclination to follow through on everything the Administration wants.

Before Congress settled down to its task, the President met with a group of American Medical Association leaders, who discussed with him the Association's position on several important pieces of legislation. Present at the White House meeting, in addition to Mr. Eisenhower and Sherman Adams, Assistant to the President, were AMA President Edward J. McCormick, Trustees' Chairman Dwight H. Murray, President-Elect Walter B. Martin, and Washington Office Director Frank E. Wilson.

Congress got into the health and welfare field with no waste of time. Within five days after Congress reconvened the House Interstate and Foreign Commerce Committee, under the chairmanship of Rep. Charles Wolverton (R., N. J.), began an exhaustive series of hearings on voluntary health insurance, further evidence that the Administration is determined to get some action in this direction.

Chairman Wolverton as long as four years ago was interested in legislation to help prepaid insurance programs extend their coverage and increase their benefits. In 1950 he incorporated his ideas in a bill, but it was not acted upon by the committee and was not revived until this year. Now the atmosphere is much more favorable for Mr. Wolverton's proposal. Not only is he chairman of the committee and his party in control of Congress, but his ideas have strong support from the Administration.

Basically the Wolverton idea is an FDIC for voluntary health insurance. In about the same way the Federal Deposit Insurance Corporation insures bank deposits up to a certain limit, the Wolverton program would insure (or re-insure) various types of hospital, surgical, and medical insurance programs. The proposal is for the federal gov-

ernment to set up a national health insurance underwriting corporation. To keep the corporation going, the member plans would contribute a certain percentage of their gross receipts, possibly 2%.

With the national corporation underwriting unusual risks, the individual programs could offer catastrophic or "complete" coverage. By scaling individual premiums to the family income, the member plans also could offer protection to families with very low incomes. The national corporation would pay possibly two-thirds of each subscriber's claim in excess of, say, \$500 or \$1,000 in any one year.

Another piece of legislation, receiving favorable attention, also would help families with their medical expenses—a proposed liberalization of income tax deductions allowed for medical expenses. Under present law, only that part of medical expense exceeding 5% of taxable income may be deducted. The pending legislation would drop this to probably 3 per cent, and raise or eliminate the maximum limit. In past years scores of bills pointed in this direction have been introduced. If this is incorporated in the general tax overhaul legislation, it is believed to have a good chance of enactment.

Secretary Hobby's Department of Health, Education and Welfare is firmly behind a proposal to have the federal government show more leadership in vocational rehabilitation of the handicapped. At this writing it is too early for any good indication as to whether physicians will be brought under social security. The Administration's bill would blanket in most self-employed groups, including dentists, attorneys, architects and farmers, in addition to physicians. Rep. Carl Curtis (R., Neb.), chairman of the subcommittee which investigated social security, apparently feels the same way. However, a substantial number of the members of the House Ways and Means Committee, which must pass on the bill, are known to feel that compulsion should not be used on groups that do not want Old Age and Survivors Insurance.

From all indications available during the first few weeks of Congress a showdown fight may be unavoidable on medical care for military dependents. Defense Department, with support from the President, wants dependent care extended and made uniform among the three services, with mili-

tary physicians carrying as much of the responsibility as they can. Under the Defense Department plan, dependents who could not be taken care of at military installations would be allowed to obtain their care from private sources, with the government paying almost all of the cost.

The American Medical Association agrees with the Defense Department that all dependents should receive medical benefits as nearly uniform as possible. However, AMA contends that wherever possible dependents should use private physicians and private hospitals, and that the military personnel and facilities should be employed only where civilian facilities are inadequate.

#### DIAGNOSING BONE TUMORS IN CHILDREN

There can be no denying the fact that malignant neoplasms of bone currently represent one of the most important causes of death in children.

This is a report made by Dr. John F. Holt, of the University of Michigan, Department of Roentgenology, in the November issue of *Radiology*.

"For the year 1948," Dr. Holt points out, "malignant neoplasms caused more deaths in children from 5 to 14 years of age than any other disease."

"When one considers that primary bone tumors, including those cases of leukemia with bone involvement, constitute approximately 25% of all malignant growth in this age group, and that they are almost invariably fatal, then their true importance becomes evident," Dr. Holt adds.

"The only encouraging fact which one can derive from this depressing situation," he says, "is that, despite the frightening statistics cited, primary malignant bone tumor is still an uncommon entity accounting for considerably less than one-half of one per cent of all pediatric admissions to the University of Michigan Hospital."

Dr. Holt explains further that the University Hospital with which he is affiliated tends to attract more patients with bone tumors than does the average general hospital.

The paper presented in *Radiology* is concerned mainly with the role of the radiologist as a diagnostician of these bone tumors.

"Actually," writes Dr. Holt, "the roentgenologist and the pathologist should co-

operate without the slightest feeling of rivalry because each is capable of enhancing the value of the other's diagnostic efforts."

Reviewing the cases he has observed at the University of Michigan Hospital, Dr. Holt outlines a simple routine of self-questioning which he advises for the roentgenologist. These questions are:

1. Is the bone significantly abnormal?
2. If abnormal, is the lesion neoplastic or non-neoplastic?
3. If neoplastic, is the lesion benign or malignant?
4. If malignant, is the lesion primary or metastatic?
5. If neoplastic, can the tumor type be identified?

"In the present state of our knowledge," Dr. Holt concludes, "the radiologist can help keep incorrect diagnosis to a minimum by evaluating each bone tumor problem with a forthright, systematic approach, and by engaging in active personal consultation with his colleagues in clinical medicine and pathology."

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#### ANNUAL MEETING ALABAMA PEDIATRIC SOCIETY

The Alabama Pediatric Society will have its annual meeting in Mobile at the Admiral Semmes Hotel on Wednesday, April 14, 1954, the day prior to the meeting of the State Medical Association. Registration will start at 8:30 A. M., with the welcome hour from 9 o'clock to 10 o'clock. The guest speakers will be Dr. Waldo E. Nelson, Professor of Pediatrics at Temple University, and Dr. James N. Etteldorf, Associate Professor of Pediatrics at the University of Tennessee.

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#### SOUTHEASTERN SURGICAL CONGRESS

The Twenty-Second Annual Assembly of the Southeastern Surgical Congress will be held at the Tutwiler Hotel, Birmingham, March 8, 9, 10 and 11, 1954.

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#### SCHEPERS HEADS SARANAC LABORATORY

Dr. Gerrit Willem Hendrik Schepers of Johannesburg, South Africa, has been named director of the Saranac Laboratory of the Trudeau-Saranac Institute, Trudeau,

New York. He is expected to assume his new duties in the late spring.

The Saranac Laboratory was established in 1894, as part of Trudeau Sanatorium, for research in pulmonary tuberculosis. In the past thirty years its activities have been broadened to include research on other chronic pulmonary diseases, particularly those of industrial origin. During 1953 the activities of the Saranac Laboratory, the Trudeau Foundation (a fund established to assist in carrying out the research program of the Trudeau organization), and the Trudeau Sanatorium (the parent corporate body) were merged under one administrative organization, Trudeau-Saranac Institute. Dr. Gordon M. Meade, formerly medical director of the Sanatorium, was appointed executive director.

Under Dr. Schepers' direction it is expected that the work of the Saranac Laboratory conducted by previous directors, Drs. Edward R. Baldwin, Leroy U. Gardner, and Arthur J. Vorwald, will be continued and expanded.

Born in De Wets Dorp, Orange Free State, Dr. Schepers attended the Universities of Witwatersrand, Pretoria, and South Africa. In addition to holding other academic degrees Dr. Schepers is a Doctor of Science and Doctor of Medicine.

From 1934-1938 Dr. Schepers was a part-time demonstrator at the Medical School, Johannesburg, and full-time lecturer there from 1939-1944. He was administrative and research medical officer, Johannesburg Municipal Benefit Society from 1941-1942 and professor of anatomy and head of the Department of Physiology, and Foundation Member of the Medical Faculty of Pretoria from 1942-1943.

He has been a member of the Silicosis Medical Bureau, Union Department of Mines in Johannesburg from 1944-1948; and, in 1944 a member, Miner's Phthisis Bureau. In 1949 and 1950 he traveled extensively in the United States, Canada, and Europe as a Commonwealth Fellow for the British Empire studying industrial medicine.

In 1952 he was named chairman of the Pulmonary Disability Committee of the Miner's Phthisis Bureau, a position which he now holds. This year Dr. Schepers was awarded the Queen's Coronation Medal in recognition of his service in the field of pulmonary disease disability.

### BLUE SHIELD COVERAGE

Twenty-seven million people are now enrolled in Blue Shield medical care plans, according to an announcement by the Blue Shield Commission in Chicago, national headquarters of these nonprofit, physician-sponsored organizations.

Frank E. Smith, director of the Commission, presented an honorary certificate in Rockford, Illinois to the 27 millionth subscriber, in a ceremony commemorating the occasion. Designated to receive the certificate was Robert Eugene Paget of Rockford, who was enrolled as a member of Northern Illinois Medical Service, Blue Shield Plan covering that area. Paget is employed by the Central Illinois Electric & Gas Company at Rockford; the company pays the entire cost of Blue Shield subscription dues for its 650 employees and three-fourths of the cost for their family dependents. Married, with two children, Paget's World War II record included active service in the European Theater with the 181st Battalion, Engineer Corps, his unit proceeding in advance of the invasion from Omaha Beach on into Germany.

The ceremony was attended by some 100

representatives of medical and other organizations, including Percy E. Hopkins, M. D. of the Council on Medical Service, American Medical Association, officials of the Illinois State Medical Society and of county medical societies, representatives of the Illinois Agricultural Association, the Illinois Home Bureau Federation, and local labor unions. Chairman of the meeting was L. E. Caster, president, Northern Illinois Medical Service. Principal speaker was Frederick H. Good, M. D., president, Colorado Medical Service (Blue Shield), and a member of the national Blue Shield Commission. Dr. Good said, in part, "The enrollment of 27,000,000 in Blue Shield Plans, with growth continuing at a rapid rate, testifies adequately to the public's acceptance of this form of prepayment for medical care, sponsored by the medical profession itself."

Hubert E. Braunig, executive vice president of the Central Illinois Electric & Gas Company, commented, "Our employees' health is a vital company asset, as the health of the people in general is a vital national asset. Blue Shield protection against the costs of medical care is an important factor in the maintenance of good health. Our employees are enrolled 100 per cent."

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## THE ASSOCIATION FORUM

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

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### EXPAND YOUR VIEW

W. A. Dozier, Jr.

Director of Public Relations

The House of Delegates of the American Medical Association has on several occasions vocalized the feelings of the medical profession in its opposition to being included under the present Social Security system (Old Age and Survivors Insurance). The present administration is calling for wider coverage of OASI, and whether physicians will be included if and when the law is passed remains to be seen.

It is only natural that the first concern of the profession should be with that part which directly concerns each physician as a person. However, as a citizen you have a greater responsibility. That is to look into the whole system and determine what needs changing. Although you may not be under

OASI, you certainly must deal with it each month; for your employees do come under the plan.

At present there seem to be two big areas of disagreement. Almost everyone seems to feel that the system is here to stay; so except for a few voices in the dark, this is not a part of the problem. The extension of coverage is controversial, however. Since you are so directly concerned with this, nothing more will be said about it here.

The second big area of dispute is the amount of the tax. On January 1 the tax was raised from 3 per cent to 4 per cent (one-half from employer and one-half from employee). This raise is part of a long range plan which calls for a raise to 5 per cent in 1960, 6 per cent in 1965, and 6½ per cent in 1970. Present planning has gone no further, but actuaries seem to feel that the sys-

tem will require 8 per cent by 1995, this to be split between employer and employee as presently practiced.

There are several evident schools of thought on what should be done. One group holds that the present condition of the OASI Trust Fund, the income to this Fund, and the current payments from the Fund indicate no need for raising the tax rate. Instead, says this group, the rates should be frozen at present levels and kept there until the Fund indicates that a raise is needed. The Trust Fund had a balance on hand of 18.4 billion dollars as of June 30, 1953; and the income to the Fund is exceeding the outgo. Experts assert that in a few years this surplus will be dissipated because the income will not keep up with the outgo as the system grows older and more people reach the retirement age.

A second group feels that the increase to 4 per cent should be kept in 1954 pending any changes by Congress during this year. If at the end of 1954 a decrease is warranted, then let the tax level be lowered.

A third group holds that the 3 per cent

level should be held until a thorough-going job of reworking the system can be done.

There can be little question regarding the fact that there are inequities under the present OASI setup. We have heard and will hear much more of the need to put the system on a pay-as-you-go basis. Also, it has been amply pointed out that the young people are the ones who will carry the much heavier financial burden if changes are not made. These points and many others will be brought to you in newspapers, by radio, and by speeches in the next few months.

The aim here is not to try to tell you what you should think. Instead the purpose is to try to emphasize the importance of the discussions that will be made in Congress. The OASI system and other Social Security programs have grown to enormous size and promise to continue growing. They and what is done to and with them will have a tremendous effect on our entire future economy and its stability. Let no citizen dismiss the discussions and arguments with a blithe remark of "I'm not under the system and therefore am not concerned."

## STATE DEPARTMENT OF HEALTH

### BUREAU OF ADMINISTRATION

**D. G. Gill, M. D.**

State Health Officer

### VICTIMS OF THE DARK

Contributed by

**John M. Gibson, B. Litt., Director**

Division of Public Health Education

You may have read Mrs. Dale Evans Rogers' inspiring little book with the enticing title *Angel Unaware*. It tells about little Robin, the Rogers family's retarded baby. Dr. Norman Vincent Peale said in the introduction that he read the manuscript "with misty eyes." Many others undoubtedly have also read it, if not through tear-misted eyes, at least with strong emotional feelings. For to read about little Robin Rogers' brief stay on earth, as told in the simple, moving words of her mother, is to have a rare and moving human experience.

Robin Rogers was not born blind. But many other babies are. And still others—many of them—become blind, totally or par-

tially, early in their lives. Loving parents who find that their babies will have to go through life under this heavy handicap must experience the same sort of shock and feeling of near-despair that Roy and Dale Rogers felt when they found out the tragic truth about little Robin. It is doubtful if their eventual reaction to these handicaps is as noble as those of Roy and Dale, however.

Fortunately, like other of life's misfortunes, blindness is not as bad as it appears to be from the point of view of the parent. In many cases, the parents have never seen a blind child before. Or, if they have, those they remember were youngsters, or ex- youngsters, to whom blindness has been especially cruel. They remember young people, the middle-aged and old people selling pencils on windy street corners. Or those whom they think of as typical of the blind—but probably are not—were engaged in other poorly paid or even menial occupations. They have been saddened by the statistics showing that many of the physi-

cally handicapped, including the blind, are objects of charity or at least dependent upon other members of the family for the money they need for life's necessities. Anxious parents do not hear enough about Helen Keller, who has become a world figure in spite of not only blindness but also deafness and the inability to speak. (She was able to overcome this last-mentioned handicap, but that left her with two.) Worried fathers and mothers should extend their knowledge to include the lives and successes of those who have made outstanding successes as business men and women. They need to know about an Alabama country doctor who delivered babies and carried on a general practice for many years in spite of his living in a world of perpetual darkness. They should look into the records of the U. S. Congress, where, if memory is not faulty, two blind Senators were serving at the same time. They ought to know more about successful and even famous editors and authors, from John Milton to men and women who have successfully edited country newspapers, who either were born blind or became blind in their comparative youth. As the author of a Children's Bureau booklet reminds us, many parents of blind babies "don't realize there are thousands of blind people who have responsible, well paying jobs, who perform skilled trades, who are business leaders."

It is natural for us to feel pity for the sightless child, even when he is not our own. But here is something we should keep in mind: We are accustomed to normal sight. Our whole mode of life is shaped around our ability to see and get around like other normal people. But a sightless child does not, in a sense, miss the precious eyesight we take for granted. For he has never known it. His way of life is shaped around sightlessness. We do not greatly miss those things which we have never had. The poor who have been poor all their lives do not particularly miss the wealth which their financially more fortunate associates flaunt at many opportunities. Their scale of living has always been low. They accept their poverty as a part of their lives. And, in the same way, the child who has never seen does not have the terrible shock and sense of loss which any of us would feel at giving up something we have long known and enjoyed.

As time goes on of course, the sightless

child will find out that he is different from other children. He will learn that they can run to their parents without having to wonder about avoiding objects which may be in the way. He learns that night and day, a dark room and brilliant sunlight are not as different to others as to him. And that is a saddening discovery. But, as already pointed out, it does not come until later. It is some time before it occurs to him that others see better than he can, that they can get about and amuse themselves in ways he never dares hope to.

That period in which he does not know that painful difference is a time of opportunity for his parents. It is an opportunity for them to become adjusted to the fact that their baby requires care and attention which other babies do not require. It is a chance for them to accept without rancor or bitterness the disappointment which becoming parents of a handicapped child inevitably brings. It gives them time to pick up and put together the pieces which were made by the brutal crashing of their plans for their baby. During those months or years in which he lives under the happy delusion that he is like other babies, they can philosophically accept the fact that their own lives too will be different from what they would have been had he been normal.

Parents should not blame themselves for their disappointment. That is entirely to be expected. But they should not close themselves to help from others either. As the already-mentioned author of the booklet, *The Preschool Child Who Is Blind*, tells us:

"It is perfectly natural and normal to have such feelings. They are not at all uncommon. Some parents are helped by talking with other parents of a blind child. Parents who already have lived through those unhappy first months and watched their child grow may be able to give hope to the new parents. They can tell the new parents that, as time goes by and as the baby begins to grow and develop, they will be proud of him and his accomplishments."

It should be emphasized to such parents that a blind child is just about like other children in most respects. He is still one of those wonderful pieces of mechanism we know as human beings. He has a mind, which, the parents may find, is superior to those of most babies. He possesses physical strength which increases as he grows older. He has a nose, ears, hands, feet and all but one of the other normal faculties. In other words, he is still very much the kind of baby parents want to have.

In that period of readjustment for the parents and blissful ignorance for the child, the former need especially to make him feel that he is loved and wanted. They should be especially careful not to allow their disappointment and sadness to affect their attitude toward him. He should never be made to feel that they are ashamed of him or embarrassed by his clumsiness as he makes his way about as best he can in his dark world of sightlessness. He should not be allowed to develop a feeling of inferiority with respect to his brothers and sisters or conclude that his parents think more of them than of him.

One of the important ways in which a blind child is similar to other children is the need for good general health. He has the same susceptibility to the usual diseases of babyhood and childhood that other children have. He becomes overtired like other youngsters. He needs plenty of rest. That means in the daytime, as well as at night. He needs the same sort of periodic physical examinations—the kind thousands of Alabama babies get at the state and county health departments' well baby clinics—that his young playmates need. He needs to be watched to prevent a bad cold from so weakening his resistance that he becomes an easy prey to influenza or pneumonia. He needs to take the same "shots" that are given to other children.

But he also needs additional medical care and supervision which other youngsters do not require. Blind though he is, he should visit an eye specialist from time to time. His parents need to talk to the specialist so as to keep themselves informed regarding the condition of his eyes. If, in spite of all the parents can do, his blindness affects his emotions, his outlook and his attitude toward others, psychiatric care may be called for. The services of a social worker may be helpful. And the public health nurse is a good person to know and keep in touch with.

Even when parents control this disappointment and make a successful effort to avoid making any distinction in their attitudes toward their sighted and sightless children, they may do some things which are harmful. Here is what we find in that already-mentioned booklet:

"Some parents are slow in playing with their blind baby. They don't joggle him on their knee or pick him up even. Babies enjoy such play and attention whether they can see or not. They may be little but they are not fragile and enjoy a romp

with their mother or father. Always let your baby know that you are going to pick him up. He may be startled if suddenly he is lifted without warning.

"Some parents keep their blind baby in his crib too long—weeks after he begins moving himself about, pulling himself up by the rail. They are afraid he will hurt himself when he begins to roam. Even when they place him on the floor he usually has no more space than a playpen. A playpen is fine but see to it that he doesn't stay there too long. Most blind babies can make good use of the outside of a playpen. They use it to walk around and pull up on. As soon as they can sit up and touch the floor, some like a stroller. Your baby may need encouragement to begin making little side trips—to feel the rug and the smooth floor, the train of little wooden cars you will put there for him, the grass out of doors. Don't force him. One day he may not be interested in trying something, may even refuse to have anything to do with it. The next day or two he may want to try it. Accept his feeling in this regard."

Unfortunately—and most unfairly—many people associate mental dullness with blindness. They figure, most unrealistically and most illogically, that the slowness with which their blind children learn things is due to less than normal intelligence. The simple fact is that this is not true. Apparent dullness there may be. But the real thing is not there. At least, if it is, it does not have any connection with their blindness.

Remember that blindness naturally slows up mental, as well as physical, action. You don't expect a blind child—or a blind adult, for that matter—to walk down the street with the careless, confident stride and with the speed of a person with normal vision. You don't expect him to handle a piece of machinery as skillfully as the unhandicapped, at least at first. Blind children cannot play with toy trains as confidently as their more fortunate playmates. By the same token, they usually take longer to learn to read. It requires more time for them to make certain normal emotional adjustments—the same which other children have to make. When they start to school, they may find it harder to keep up with their classes. But that is not because there is anything wrong with their minds. The mechanics of doing these things become more complicated and difficult when they must be performed under the handicap of darkness.

As a matter of fact, many blind children—and blind adults—are of distinctly superior intelligence. They not only are able to overcome their handicaps to the extent of keeping up with others. In many cases, they

pull out ahead of their companions. As has already been pointed out, in a few instances—enough to prove an inspiration to others who are blind—they reach the dizzy heights of national and even international renown.

We need to be more sympathetic toward our blind of all ages. But blind youngsters exert a particularly strong tug at our hearts and our sympathies. Let us help them in every way we can. And let us do all we can to help their parents.

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director

SPECIMENS EXAMINED

November 1953

Examinations for diphtheria bacilli and Vincent's	277
Agglutination tests	783
Typhoid cultures (blood, feces, urine and other)	505
Brucella cultures	11
Examinations for malaria	85
Examinations for intestinal parasites	2,818
Serologic tests for syphilis (blood and spinal fluid)	20,909
Darkfield examinations	3
Examinations for gonococci	1,271
Examinations for tubercle bacilli	3,069
Examinations for meningococci	0
Water examinations	1,591
Examinations for Negri bodies	100
Milk and dairy products	4,596
Miscellaneous	2,493
Total	38,511

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1953

	Oct.	Nov.	E. E.* Nov.
Typhoid and paratyphoid fever	8	4	2
Undulant fever	3	1	4
Meningitis	7	9	9
Scarlet fever	64	42	81
Whooping cough	16	46	54
Diphtheria	47	27	53
Tetanus	7	4	4
Tuberculosis	274	154	183
Tularemia	1	0	1
Amebic dysentery	2	0	2
Malaria	4	3	12
Influenza	211	345	107
Smallpox	0	0	0
Measles	44	178	25
Poliomyelitis	38	9	9
Encephalitis	0	0	0
Chickenpox	53	67	61
Typhus fever	1	0	11
Mumps	18	26	37
Cancer	365	319	319
Pellagra	2	0	2
Pneumonia	114	139	125
Syphilis	208	139	63
Chancroid	12	7	13
Gonorrhea	413	322	367
Rabies—Human cases	0	0	0
Positive animal heads	35	25	0

As reported by physicians and including deaths not reported as cases.  
\*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR SEPTEMBER 1953

Live Births Stillbirths and Deaths by Cause	Number Registered During September 1953			Rates* (Annual Basis)		
	Total	White	Colored	1953	1952	1951
Livebirths	7501	4676	2825	28.8	30.2	29.0
Stillbirths	177	80	97	23.0	24.9	24.9
Deaths, stillbirths ex- cluded	2021	1238	783	7.8	7.6	7.7
Infant deaths—						
under one year	215	117	98	28.7	29.7	35.7
under one month	155	90	65	20.7	22.7	26.5
Cause of Death						
Tuberculosis, 001-019	39	13	26	15.0	14.8	20.8
Syphilis, 020-029	11	1	10	4.2	3.5	4.3
Dysentery, 045-048	1			0.4	0.8	0.8
Scarlet fever, 050	2	2		0.8		
Diphtheria, 055						
Whooping cough, 056					1.9	
Meningococcal infec- tions, 057						0.8
Poliomyelitis, 080-081	3	2	1	1.2		1.2
Encephalitis, 082, 083	5	5		1.9	1.2	2.7
Measles, 085					0.4	0.4
Malaria, 110-117					0.4	
Malignant neoplasms, 140-205						0.4
Diabetes mellitus, 260	266	200	66	102.1	95.3	75.7
Pellagra, 281	19	13	6	7.3	7.0	6.3
Vascular lesions of central nervous sys- tem, 330-334	3	2	1	1.2		0.8
Other diseases of ner- vous system and or- gans of special sense, 340-398	286	172	114	109.7	82.8	88.2
Rheumatic fever, 400-402	18	12	6	6.9	8.2	13.3
Diseases of the heart, 410-434	4	2	2	1.5	1.2	0.4
Hypertension with heart disease, 440- 443	445	310	135	170.8		
Diseases of the arte- ries, 450-456	147	74	73	56.4	232.6	221.5
Other diseases of cir- culatory system, 444-447, 460-468	33	25	8	12.7	10.1	7.1
Influenza, 480-483	43	19	24	16.5	12.8	11.0
Pneumonia, 490-493	2			0.8	1.6	
Bronchitis, 500-502	42	21	21	16.1	13.2	19.6
Appendicitis, 550-553	2			0.8	1.9	
Intestinal obstruction and hernia, 560, 561, 570	4			1.5	0.8	1.2
Gastro-enteritis and colitis (under 2)	9	6	3	3.4	1.9	2.7
Cirrhosis of liver, 581	12	2	10	4.6	7.8	7.8
Diseases of pregnancy and childbirth, 640- 689	9	4	5	3.4	5.8	3.1
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 681, 682, 684	8	1	7	10.4	23.8	18.4
Congenital malforma- tions, 750-759	2			2.6	7.5	4.0
Accidental deaths, total 800-962	25	16	9	3.3	3.7	3.9
Motor vehicle acci- dents, 810-835, 960	166	115	51	63.7	50.6	67.4
All other defined causes	83	60	23	31.8	21.4	36.9
Ill-defined and un- known causes, 780- 793, 795	343	194	149	131.6	150.9	162.3
	74	27	47	28.4	38.5	36.5

Rates: birth and death rates per 1,000 popula-  
tion; infant deaths per 1,000 live births; still-  
births per 1,000 deliveries; maternal deaths per  
10,000 deliveries; deaths from specified causes  
per 100,000 population.

## BOOK ABSTRACTS AND REVIEWS

**Physiology of the Eye. Clinical Application.** By Francis Heed Adler, M. A., M. D., F. A. C. S., William F. Norris and George E. de Schweinitz Professor of Ophthalmology, School of Medicine, University of Pennsylvania, and Consulting Surgeon, Wills Hospital, Philadelphia. Second edition. Cloth. Price, \$13.00. Pp. 736, with 329 illustrations (3 in color). The C. V. Mosby Company, St. Louis, 1953.

This delightful book is probably the only modern and all-American presentation of the clinical physiology of the eye, and is of particular value in that it does not burden the student or practicing ophthalmologist with higher mathematical formulas.

The first edition was published 20 years ago. Since then many advances have been made in the subject, requiring that the volume be completely rewritten. This Dr. Adler has done, with complete review of the literature and incorporating his vast knowledge of ophthalmic physiology.

Dr. Adler succeeds admirably in presenting the application of eye physiology to the study of eye diseases, so well illustrated in his chapters on ocular motility. Here one readily appreciates that the medical and surgical approach to strabismus is through a comprehension of the neuromuscular mechanism which normally maintains the two eyes in alignment. This book gives the ophthalmologist the recent findings in the physiology of the eyes as worked out in the experimental laboratory, and applies these facts clinically correlated with the author's own experiences.

The new material added to this second edition includes the chapter on visual acuity—which includes many practical features, such as the physiologic factors of importance in refraction, the Stiles-Crawford effect, and the part it plays in accommodation. The section on muscles is enlarged, and the recent work of Wald on the visual purple cycle has been included. The work of Kinsey on the aqueous humor and the lens and portions of the chapter on the cornea are reviewed and reaffirmed.

This edition is larger than the first, the paper glossier, the 734 pages of the book better printed, and the illustrations of a higher quality and more numerous. The book is one each student and practicing ophthalmologist should own.

Karl B. Benkwith, M. D.

**The Epidemiology of Health.** Edited by Iago Galdston, M. D. Cloth. Price, \$4.00. Pp. 197. New York and Minneapolis: Health Education Council, 1953.

Here is presented within the tight compass of less than 200 pages the views of a group of outstanding men of medicine on the problems of present-day epidemiology. Those who have made

their contributions, in addition to Dr. Iago Galdston, the editor, include Dr. Owsei Temkin, associate professor of the history of medicine at Johns Hopkins University, Dr. John E. Gordon (Ph. D., as well as M. D.), professor of preventive medicine and epidemiology at Harvard's School of Public Health, Major General George E. Armstrong, Surgeon General of the U. S. Army, Dr. Leo Price, director of New York's Union Health Center, Dr. Alton S. Pope, deputy Massachusetts health commissioner, Dr. Erich Lindemann (also a Ph. D., as well as an M. D.), associate professor of mental health at the Harvard University School of Public Health and psychiatrist on the staff of the Massachusetts General Hospital, Dr. Herbert Pollack, associate physician for metabolic diseases at New York's Mt. Sinai Hospital, Dr. Frederick D. Zeman, chief of medical service of the Home for Aged and Infirm Hebrews, in New York, Dr. Ralph W. Gerard (M. D., Ph. D. and D. Sc.), professor of neurophysiology and physiology and director of research in the Neuropsychiatric Institute of the University of Illinois, Dr. Roger I. Lee, fellow of Harvard College, Dr. Haven Emerson, member of the New York City Board of Health, and Dr. Granville W. Larimore, who recently resigned as director of the Office of Public Health Education of the New York State Department of Health. Dr. Howard R. Craig, director of the New York Academy of Medicine, supplied a foreword. This is indeed an impressive roster.

Each of these authorities has his own peculiar approach to the broad question of better health for all, with particular concern for the curbing of the infectious diseases. But a single central theme is emphasized through and through. That is the newer concept that health is a positive thing, not merely the absence of illness. There is also considerable stress upon the idea that good health is a good thing for communities as well as for individuals and that it is worth paying good money—lots of it—to achieve. Dr. Temkin, for example, quotes M. von Pettenkofer as having written in 1873:

"That health has an ideal value, is generally accepted, but . . . I wanted to show you that health has also a very tangible value to a city and that there is no better investment of money than in institutions for the preservation and improvement of health."

To those who think of epidemiology as something that came in with the steamboat, Dr. Gordon has some news: It (epidemiology) was here, or rather in ancient Greece, as long ago as the fifth century, B. C. For Hippocrates devoted several books to disease outbreaks, especially the volume which has been translated into English under the title *Airs, Waters and Places*. According to the Harvard professor of preventive medicine and epidemiology, the father of medicine "brought out that one does not treat a disease,

but a sick man; an individual, and yet not an isolated individual, but a member of a group."

Dr. Price reminds us that working conditions in industry have not always been as favorable to health as they now are, and until roughly the end of the nineteenth century they were pretty bad. Even now, when dangerous machinery contains protective screens, workers wear eye-saving goggles, there is plenty of fresh air in most factories and most enlightened concerns keep a watchful eye on the sickness rolls, workers are not as healthy as they should be. For "it has only recently been contended that a worker's health is affected not only by his working conditions but also by his domestic environment and his economic and social status in the community as a whole."

The *Epidemiology of Health* is not intended for the general reader. You have to be very much interested in the subject before you can fully enjoy a work of this kind. But there are many thousands of health enthusiasts in the country. And to them it opens the gateway to fields of reading which are both pleasant and profitable.

John M. Gibson.

**Films in Psychiatry, Psychology and Mental Health.** By Adolf Nichtenhauser, M. D., Marie L. Coleman, and David S. Ruhe, M. D. First edition. Cloth. Price, \$6.00. Pp. 269. Health Education Council, New York, 1953.

Soon after the end of World War II there was a sharp awakening in the United States to what has become known as the mental health movement. The impetus of the tremendous developments in wartime training and information films was still alive, and it was natural for the new mental health movement to avail itself of the motion picture as an effective means of enlight-

enment. Films began to play an increasingly important role in the expanding area of mental health—as instruments for the teaching of professionals in psychiatry, psychology, psychiatric social work and nursing. But motion pictures are now being used most extensively with community organizations and with parents eager to know child psychology.

This volume reports a detailed study of a large number of films in psychiatry, psychology, and mental health from the broad viewpoint of the medical audio-visual educator. The first four chapters provide perspective and background for the reviews by discussing various general aspects of the films: their history, their content, and their application in professional training and public education.

The body of the book consists of 51 critical film reviews. Such evaluation follows a uniform pattern of opening with a resume' which briefly summarizes the content and appraisal of the film. Next follows a listing of the audiences for whom the film appears suitable. Then comes production and distribution data, information about the running time of the film, and the expense involved in its use.

From a practical standpoint, this book may well take the place of actually previewing the 51 films herein reviewed, thus saving the time and money required to do this. Moreover, it might serve the purpose of instructing its readers in how to evaluate mental health films, how to discriminate between a good film and a poor one.

This volume could be of particular help to psychiatrists, health educators, supervising nurses, mental health clinic staffs, psychologists who teach, and to mental health volunteer workers who oftentimes lead group discussions following the showing of such films.

John M. McKee, Ph. D.

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## AMERICAN MEDICAL ASSOCIATION NEWS

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### EMOTIONAL FACTORS MAY CONTRIBUTE TO EAR DISORDER

Emotional upsets may contribute to a form of deafness known as otosclerosis, according to Dr. Edmund P. Fowler, New York.

Writing in the January 23 *Journal of the American Medical Association*, Dr. Fowler stated that he has found the incidence of the disease—a formation of bone in the inner ear that results in deafness—to be greater in emotionally sensitive or unstable persons predisposed to the disease than in more emotionally stable ones.

"In otosclerosis the onset of deafness and its periods of rapid increase appear to coincide in time with, or more commonly subsequent to, puberty, childbearing, the onset of

the menopause, severe illness, psychic traumas, and stress and anxiety, all of which are accompanied by major autonomic nervous system readjustments or dislocations," Dr. Fowler said.

He reported on a 12-year study of seven pairs of identical twins, one or both of whom had otosclerosis in one or both ears. In one pair of male twins, only the right ears were severely deafened, in two pairs of female twins both ears had deafness, in two pairs of female twins one twin in each pair had deafness in one ear, and in two pairs of female twins one twin in each pair had no deafness in either ear at first examination.

"In the identical twins studied, in every instance but two, the twin in whom deafness due to otosclerosis first developed was the

one who prior to the deafness was the more emotional of the two," Dr. Fowler pointed out. "In two instances otosclerosis developed in both twins about the same time and both suffered severe emotional stress in their teens."

According to Dr. Fowler, the time lapse between the onset of the lesion of otosclerosis and the appearance of deafness may be months or years. He added that the affliction occurs more frequently in some families and generations than in others, and that diagnosis of otosclerosis in children and young adolescents is usually impossible or very uncertain.

### IT'S THE HUMIDITY THAT'S SHOCKING

Here's something you can blame on the humidity—that shock you received recently when you touched someone or something.

When the humidity is very low, such as on cold, dry days, there is a tendency for persons and objects to develop a static electrical charge on the surfaces, it was explained in the January 23 Journal of the American Medical Association. This tendency is enhanced by friction, such as walking across a rug or sliding over an automobile seat. A moving automobile, for instance, readily develops an electrical charge due to the friction of the air flowing over its surface.

What can you do about this phenomenon? Indoors, relief can be obtained by humidification of the air in the room, according to the Journal. One way of minimizing the development of a static charge on the surface of an automobile is to attach a piece of "conductive rubber" to the car so that the rubber drags on the ground, allowing for the discharge of the electrostatic charge.

Those persons who find the slight shock disturbing can avoid the situation by touching the object from which it is suspected a shock will result with something metallic, such as a coin or a key gripped tightly in the hand, the Journal said. This will permit the electrical discharge to pass between the metal coin or key and the object the person is about to touch.

### REPORT SURGICAL WOUNDS HEAL SATISFACTORILY WITHOUT DRESSINGS

In certain cases, satisfactory healing of surgical wounds may be obtained without the application of postoperative dressings, it was reported in the Archives of Surgery,

published by the American Medical Association.

"The advantages of leaving dressings off include the opportunity to observe the wounds more often, avoidance of irritation from adhesive tape, economies in surgical supplies and in time and effort of hospital personnel and surgeons, and occasionally reduction in hospital stay," it was stated by Drs. Carl J. Heifetz, Frank O. Richards and Montague S. Lawrence, St. Louis.

The doctors based their conclusions on two studies of 150 patients. One study involved 102 patients in whom satisfactory healing was obtained without dressings. In the second study, 48 patients were observed. For comparative purposes, they were divided into three groups—those in whom wounds were covered at the termination of the operations by the customary gauze dressings, those in whom wounds were covered by similar dressings which were removed 24 hours after the operations and those in whom wounds were left without dressings. Equal and satisfactory wound healing occurred in all three groups, the doctors stated.

There was ready acceptance by patients of the principle of leaving wounds without dressings, according to the doctors. In fact, many patients expressed satisfaction in seeing the progress of their wounds from day to day.

"The results of these observations seem to corroborate our conclusions from experiments on rabbits that the application of a dressing to a clean, undrained, well-coaptated wound has no significant gross effect on wound healing," the doctors said.

"A close examination of the data suggests that bacterial counts were lower oftener when the wounds were left without dressings."

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## ASPECTS OF PSYCHOTHERAPY IN EVERYDAY PRACTICE

CARL BINGER, M. D.

New York City

There are some who believe that everything a doctor does for his patient or does in his presence, that everything he says, or perhaps even feels, comes under the heading of psychotherapy. If this is a fair statement, and I agree with it, then a doctor is always a psychotherapist, whether he knows it or not, whether he wants to be one or not, whether he believes in psychotherapy or not. The problem before us is: *How can the doctor become a good psychotherapist rather than a meddler, a bungler and a mischief maker?*

What I have said applies as much, though it may be less apparent, to a surgeon or an obstetrician or a G. U. man or a nose and throat man or an ophthalmologist as it does to an internist or a pediatrician. There seems to be a general belief, however, that when we possess exact knowledge of the cause of an illness and a specific remedy for it, then we do not need to use psychotherapy. This, I think, is a mistaken notion, as mistaken as the idea that psychotherapy has no legitimate part in the handling of organic disorders. Let me add that I consider the distinction between functional and organic disease artificial, unscientific and, on the whole, meaningless.

Before discussing those qualities or characteristics which can help the doctor become a competent psychotherapist I should like to establish the fact that this is a necessary,

vital and essential part of his function. Why do people consult doctors? I suppose, first of all, because they suffer or are uncomfortable or are worried or frightened. These are all subjective states, no matter what caused them. If the physician is to fulfill his role he will try to allay suffering, relieve discomfort and banish worry and fear, because all of these conditions interfere with recovery and are antithetical to good health. He will have to deal somehow with his patients' feelings. Perhaps experience has taught him that the best maneuver is to disregard these subjective reactions, but this too is a form of psychotherapy, if a negative one.

One might say that the first essential to being a good psychotherapist is to have some sound understanding of psychopathology. To physicians and surgeons this statement must make sense because their best therapy is always based on a knowledge of pathology and etiology. But here we are up against our first stumbling block. Very few doctors, except those who have specialized in psychiatry, have any familiarity or at-homeness in the field of psychopathology. If they are over forty it is safe to say that their education in psychiatry has been woefully insufficient: perhaps a few demonstrations of deteriorated catatonics or manic-depressive patients in an overcrowded state hospital. If they are under forty they may have picked up a little more psychiatric information. They may know that the schizophrenias represent a kind of reaction, rather than a disease entity with a predictable course; that the affective psychoses often have an excellent prognosis, and that the

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Presented before the 13th annual meeting of the Gulf Coast Clinical Society, Mobile, October 15, 1953.

depressions of late middle life have a pretty characteristic set of associated symptoms. They may even recognize when a patient presents a serious suicidal risk. But none of this information will help them much in understanding the everyday problems of the everyday patient.

This younger group of doctors, at least those who served in the armed forces during the recent war, will have seen a great many neuropsychiatric casualties. At Draft Boards and Reviewing Boards, in Veterans Hospitals and Rehabilitation Clinics they will have seen young men and women by the scores with unaccountable symptoms; that is, unaccountable in the usual mechanical terms of medicine: backache and joint pains, headache and dizziness, fainting spells and stomach pains, nausea and vomiting, constipation and diarrhea, chest pain and cough and shortness of breath, fatigue, depression, irritability, difficulty in holding down jobs, quarrelsomeness, marital conflict, indecision, loss of memory, alcoholism, drug addiction and delinquency. This is the great backwash of war, the stress diseases of our civilized society. Whoever has come face to face with this spectacle of suffering and discontent (and who, in his practise has not, no matter what his specialty; since this group of patients constitutes the majority of all persons coming for medical treatment), whoever has encountered them will need no further evidence to convince himself of the powerful influence of the major emotions on symptom formation, and of the difficulties involved in dealing with them. Indeed, these difficulties are responsible for the fact that what really ought to be the common concern of all doctors is gradually becoming the province of a pitifully inadequate number of so-called experts. This is bad for all concerned, bad for the patients who get a good deal of buffeting about and chivying from one specialist to another; bad for the doctor who calls on the psychiatrist for help and often feels that he gets, in return, a lot of fancy words, and bad for the psychiatrist himself who is often overwhelmed by the demands made on him or, depending on his character, is either modestly aware of his own limitations or convinced that he is "some punkins" without whose services his colleagues would be lost.

Some of the reasons why medicine and surgery and the specialties are, in a manner, defaulting in favor of psychiatry are eco-

nomic ones having to do with the cost and duration of treatments. Others are related to the unsatisfactory teaching of these subjects in our medical schools. But not least important among them is the emotional attitude of many doctors themselves toward what they look upon as neurotic illness. A physician does not identify himself with a patient who *has* pneumonia or diabetes, or a carcinoma. Here is a piece of misfortune that has befallen a fellow man. As in the case of other kinds of ill luck we are sorry for the one whom it has hit and we are willing and anxious to do all we can to help him out of it. But we ourselves are intact and uninvolved and secure in the illusion of our own invulnerability. Not so with the psychoneuroses. This comes too close to home. It arouses our anxiety even though we feel pretty sure of our own freedom from neurosis.

A patient doesn't *have* a psychoneurosis. He is a psychoneurotic and we doctors often quietly despise him for it. We have, moreover, a tendency to identify ourselves with him, although we may not be aware of this. So what do we do? First we treat the patient as though he were not what we know he is. We tell him to stop smoking and to take some vitamin B and phenobarbital and we advise him to go to Florida, if he can afford it. Then we send him to an endocrinologist. And finally, as a last resort, and against our better judgment, we arrange for him to see a psychiatrist—preferably one with common sense and sound intuitions. In this connection, one of my friends once made the telling observation that when an out-patient record reaches a certain thickness—a certain net weight—the patient is usually referred for a psychiatric consultation.

Isn't it remarkable that we doctors who pride ourselves on our rational approach to therapeutics are so ready to trust to "intuition" and "common sense" only when we come to the treatment of these emotional difficulties? I should hate to be treated for pneumonia or diabetes or heart failure by a physician who depended solely on these homely virtues, valuable as they are. Someone once defined logic as a systematic way of going wrong with confidence. Common sense without knowledge is close kin to this.

You will grant me, no doubt, that more knowledge is desirable but what is the busy practitioner to do to get such knowledge if

his original training in the dynamics of personality and the innumerable problems that spring from it has been so wanting and faulty? I will try to answer this question for you, but first let me summarize an appraisal of psychiatric education which was published a few years ago, as the result of responses to a questionnaire sent to the graduates of 69 approved medical schools of North America. Of 46 departments of psychiatry only about 20 were at all adequate. Only 24 schools had then as much as one or more full time instructors in this field. Here are some characteristic replies:

"Psychiatry is only applied common sense. Why do they teach it in such fancy verbiage?"

"Psychiatry cannot be taught from books but only from handling patients. Yet patient contacts are fewer here than in clinical subjects that you can learn from books."

"Professors of psychiatry talk too much, do too little."

"So many of our instructors were queer ducks that we got to think that you had to be queer to go into the specialty."

And one poor lad's lament was this: "We had numerous instructors, and they used varying terminology and had varying ideas. What was 'tension' to one teacher was 'anxiety' to another. For that matter, what was gospel to one, was anathema to another. I respect academic freedom, but it is all very confusing."

This was part of the bill of particulars against us. Although in some respects and in some schools we have made progress since this report was published, I cannot find fault with it. Nor can I find fault with the most frequent complaint of the students, that they were not exposed to enough psychoneurotic and minor nonpsychotic case material. But they needed only to graduate and to enter the army or any hospital ward, or any out-patient department, or any private office, in any branch of medicine, to be flooded with these patients. And then their legitimate complaint might be that they saw too many of them but didn't know what to do with them.

I shall now try to tell you what I think you might do to increase your proficiency in the field of psychotherapy. First of all, you must do what Santayana used to say in his courses at Harvard: "Define the limits of

your ignorance," that is, decide for yourself how much of a psychiatrist you think you can be. This will depend on your interest, your talent, your inclination, your time, your patience and your capacity to learn new things. You may as well decide at the outset that if you are already an internist or a surgeon or a specialist, and want to continue to lead in your field, then you cannot also be a psychiatrist. Whoever tries to combine two difficult specialties is likely to be a master of neither. It is like trying to love two women at once. It sounds nice, but most men who do aren't really in love with either. This doesn't mean that the alternative is just to flirt with psychiatry, nor to philander with her. You have to treat her with respect and some reverence and even call on her occasionally to get to know her ways and perhaps bring her some flowers. You may even have to consort with those strange men who cohabit with her.

There is absolutely no objection to reading some books on the subject. As you know, they come out by the dozens. One of my patients sent me a cartoon a few years ago of an importunate woman ringing the bell of a doctor's office; when the door was opened she said, breathlessly, to the nurse: "I'd like to see the doctor, if he isn't writing a book."

I will mention only one or two books here. There is a book by Dr. Maurice Levine, the Professor of Psychiatry at the University of Cincinnati Medical College, called *Psychotherapy In Medical Practice*. It is simple, straight-forward, practical and includes a good reading list. There is also a book, published in 1947, by the Commonwealth Fund under the title *Teaching Psychotherapeutic Medicine*. This is a report of an experimental course for general physicians, given at the University of Minnesota by a team of excellent men, mostly, but not all, psychiatrists. Since this book records the spontaneous comments of the group it is pleasantly free from pedantry. It covers a wide range of topics, touching on normal personality development, the patient-physician relationship, the more common types of psychopathology, the diagnosis of psychoneurosis and general principles of psychotherapy. This book, like Levine's, is worth perusing. It too contains a short list of suggested readings.

From your reading you will learn something about the mechanism of symptom for-

mation and the significance of emotional conflict in such defensive reactions, for example, as vomiting, constipation, diarrhea, sweating, shortness of breath, palpitations, loss of appetite, constant hunger and obesity. These symptoms and many others like them should always be thought of as expressing an emotional need, as well as perhaps betraying some diseased organ or organ-system. When they do reflect an emotional disturbance this underlying disturbance may have to be dealt with if the patient is to get well. In fact, it may be risky business just to remove a symptom without giving the patient the benefit of some insight. A symptom often represents an attempt at the solution of a neurotic conflict. With all its incapacitating disadvantages it conceals a secret, but genuine, gratification. If we take the symptom away we may add to the patient's emotional burden and precipitate him into a state of decompensation, a depression, for example, or confusion, or even panic. I am sure you have all seen obese patients become depressed when they were put on a rigid reducing diet. We have come to realize that there may exist a kind of reciprocal relationship between the somatic and the psychic manifestations of some disorders. I recall a man who developed a paranoid psychosis when his ulcerative colitis was temporarily cured, and whose psychosis cleared up when his colitis recurred; and a woman who recovered from years of giant urticaria only after she went into a negativistic, withdrawn, presenile depression. These events are probably not coincidences, although we do not yet wholly understand them.

You should also learn from your reading some of the fundamental mechanisms of the mind. Such theoretical terms as the *ego*, the *super-ego* and the *id* should not be foreign to you, nor such processes as *compensation*, *rationalization*, *identification*, *reaction-formation*, *displacement*, *projection* and *conversion*. These mechanisms are in constant use by all of us and yet, when exaggerated, they may be the basis of abnormal behavior. Every educated man, even doctors of medicine, should know something about them, and also about such concepts as *ambivalence*, *repression*, *suppression*, *sublimation* and *transference*; if only so that they can talk with psychiatrists about their patients and find a common and intelligible language.

The medical profession still shares with the public many of the misconceptions and prejudices about psychiatry and psychiatrists. I can assure you that no psychiatrist worth his salt says to his patient: "Sir, you have a terrible oedipus complex, you are full of castration anxiety and, as a matter of fact, if you only knew it, you are fixated on your great aunt!" We do not use technical jargon in talking to our patients, only in talking with each other, and sometimes to you. We are not all queer birds, that is, not much queerer than Thee and me. We do not believe that sexual experience will cure all psychiatric disorders or that lack of it is the cause of them. Nor do we recommend the immediate satisfaction of all primitive impulses. Heaven forbid!

We think it lamentable that in many communities it is looked upon as a disgrace to consult a psychiatrist and that in many more there are no good psychiatrists to consult. I recently saw a report in the press of a courtroom scene in which one woman said of another: "Why she's not even human. She ought to go to a psychiatrist."

Although this was said in all seriousness there is an ever increasing number of jokes and cartoons about us. I have long been interested in them and look upon these friendly, affectionate and mildly derogating comments as all to the good. They reflect a better understanding of psychiatry and a better relationship with psychiatrists.

I hope that other doctors will continue to poke fun at us in a friendly way, but that they will also exchange ideas with us about their patients, so that we may constantly learn from each other.

If the doctor in everyday practise is to acquire some working knowledge of psychotherapy he will have to do some reading and he should try to achieve a working relationship with psychiatrists, but, more important still, he will need to take the time and trouble to learn something about the person he is treating. This does not mean digging and delving and extracting confessions, but rather getting the patient into the frame of mind in which he is able to talk and then listening to him attentively. The doctor should avoid interpretations of symbolic acts and dreams, or leading his patient into exposing unconscious material. This will simply provoke anxiety, which neither the doctor nor his patient will be able to use constructively.

That is what I meant before by meddling and bungling and mischief making. All such uncovering techniques are for the more professionally trained psycho-analytically oriented psychiatrists. A physician in everyday practise must depend on *education, reassurance, support and management* of the patient's problems, either directly or through the help of others.

I will take up these elements of psychotherapy separately and briefly. First, education or enlightenment, or giving the patient insight and understanding. This can accomplish a great deal by way of allaying anxiety. It is especially useful in some psychosomatic states when the patient is greatly worried or concerned about his heart or his blood pressure, or his stomach or his head, or does not know that these unpleasant symptoms often result from emotional tension. Just explaining certain simple physiologic mechanisms is valuable for some patients, especially if they realize that what they are complaining of is not unique to them and that we doctors don't think their complaints are "all imagination." The fact is, a symptom is never imaginary to the person who suffers from it, no matter what its cause, only to the doctor who can't account for it. Simple diagrammatic explanations of the workings of the sympathico-adrenal system, for example, and its effects on the blood vessels or the digestive tract may help a lot. A doctor can also do much to dispel popular misconceptions and superstitions about mental and physical illness and round out the half-knowledge which every literate person has thrust upon him in the popular magazines.

But I am not much for giving lectures to patients, nor of doing all the talking. Let the patient talk and keep quiet yourself. That is the first step in good psychotherapy. That will give him the feeling that you are interested in him and when he is convinced of that he will tell you more about himself than he knows he is doing.

A great many doctors are so afraid that their own emotions may be aroused by their patients either out of sympathy or dislike, or even amorousness, that they don't give them a chance to get a word in edgewise. They talk at and down to them to protect themselves and, as they think, mistakenly, to save time. Before they know what to reassure them about they will begin to reassure them in a premature Pollyanna sort of

way. A patient complaining of the symptoms of an ulcer may not be at all reassured when he is told that x-ray does not show any deformity of the duodenal cap. He may actually be galled by his domineering, aggressive wife or his unreasonable boss, and may want to talk about that. But the doctor's insistent and prompt reassurance may shut him up completely. Reassurance in the face of any considerable anxiety is at best a temporary and superficial expedient and needs, like digitalis in a failing heart, to be constantly repeated. The most reassuring thing is the quiet, firm integrity of the physician, his devotion to his job and his scrupulous thoroughness.

The other day a Fourth Year student came to me in perplexity. Mrs. S. had been admitted to the Ward. They had found that she had no evidence of heart disease whatever, in spite of her dyspnea and chest pain. For five years she had been treated in the Cardiac Clinic and had been told that she had a "rheumatic heart." What should he tell her? If he told her that she did not have heart disease she would lose faith in all doctors. I said to him: "They will have to find out what she has got and then you'll have to give her something else to hang on to. You can't take her heart disease away from her and leave her empty handed. This would not be reassuring to her."

Since people who are sick usually feel threatened they need a stout ally in their fight for health. A good doctor is the natural ally and a thorough physical examination is one of the most reassuring and supportive maneuvers at the hands of physicians. But the patient need not be told about insignificant data, unimportant cardiac murmurs, for example, or laboratory findings, which he certainly won't understand. In many cities it is a practise among some of the well trained and most successful physicians to send their patients long written reports on their physical examinations, with everything from hematocrit readings to urea clearances. I think this is a mistake. It may, to be sure, impress the patient with his doctor's painstaking thoroughness but it also provides him with a lot of stuff about which he will only be perplexed and worried. Examinations should not be too prolonged without adequate explanations. It is very bad psychotherapy to make premature announcements. A patient of mine was told the other day, by an orthopedist, that the

x-ray films of his hip looked as if he had some cystic degeneration of the femur, but the films weren't dry and he couldn't be sure until the next day. A young girl, applying for a job in the hospital was asked to have the x-rays of her lungs repeated and then, by way of reassurance, she was told not to worry. This statement, of course, was the very thing that made her worry.

Closely related to reassurance and support is management of the patient's problems or what is sometimes called *environmental manipulation*. Here a good social service worker can be of inestimable help, not only to find out facts but to confer with relatives or employers and to see where the burden on the patient can be lessened or his satisfactions and rewards increased. But most of us learn with experience that we cannot play the part of God or deal with our patients by pulling strings, as if they were puppets. In the end we must help them face the facts of their lives and deal with these, if possible, without recourse to illness.

This means that we must have a pretty clear notion of our relationship with them. We will find that the nature of this relationship is at the very heart of all psychotherapy. Certain general statements can be made about it, but the more particular facts you will discover for yourselves in the course of taking the history from your patients and in your other contacts with them.

When a more or less healthy person falls sick without much warning and can no longer take care of himself he, of necessity, grows dependent on those around him. He needs help. He quickly loses interest in the outside world. We say he doesn't care whether school keeps or not. He may lose his appetite, he certainly doesn't grab for the morning paper to look for stock quotations or baseball scores. He withdraws his interest from the outside world and turns it back on himself. He is preoccupied with his comfort and with certain primitive bodily functions. If he isn't then at least his nurses are. We psychiatrists say that such a patient has regressed to an earlier form of adjustment. He exhibits a kind of return to childhood when the need for care was great because of the child's weakness and inadequacy. The sick person must use all his resources to cope with the difficulties he faces and he cannot do it alone. He has no energy to spare for the outside world.

In this setting the doctor plays a double role. First of all a realistic one. He is summoned because he has had training and experience and expert knowledge in dealing with illness. But another role is imposed upon him, whether he wants it or not. Just as the sick person has returned to a dependent, childish state, so surely will he make of his doctor a kind of parent from whom he expects magical omnipotence. The doctor will, therefore, be overvalued, prized too highly in an unrealistic way. Many a young doctor is beguiled and enthralled by this heroic picture of himself. If he falls in love with it he will inevitably turn into a stuffed shirt or a sawdust Caesar who must always be right and cannot stand criticism. Such a doctor will not make a good psychotherapist because he will have to try to perform magical cures which, of course, won't work in the long run. He will never know that the patient who so over-estimates him often unconsciously hates and fears him for not performing the magic that is expected and demanded of him. This is particularly true of neurotic individuals whose tendency to revert to the adaptations of their childhood is easily set off by any threat to their bodily health or safety. These patients, even when they like us and admire us, fight us in-so-far as we try to relieve them of symptoms which also represent sources of unconscious gratification. Zilboorg thinks that this is the secret of the great general opposition to psychiatry, that the public and the medical profession as a whole unconsciously identify themselves with the unconscious of the patient and each patient secretly hopes that the psychiatrist will give him license for the free practise of the infantilism to which he is addicted through his symptom.

But perhaps I am going a little bit out of bounds. Let me point up, however, some of the practical problems that spring from the infantile dependence of the patient and the double role of the physician. There are patients who keep changing doctors all the time, who run from one specialist to another; there are those who refuse to stay in bed and others who refuse to get out of bed. They kick about fees and they don't pay their bills, and, what is more irritating than anything else, they often just won't get well. The care and attention which they require must be appropriate not only to the nature of the illness but to their emotional needs. This is especially true in the handling of

chronic invalids and in convalescence, a state in many respects similar to adolescence in which the individual is groping and feeling his way toward independence. He should be encouraged to turn his interests back again to people and things outside of himself and yet feel the support and protection he needs for recovery. A wise physician will be alert to these subtle shifting forces.

There is no better access to the patient's personality than taking his history. This is the beginning of the therapeutic relationship. If the doctor is sympathetic and interested and not too mechanical, flat, routine or hurried, then the patient will gain what we call rapport. He will be willing to talk about certain aspects of his life that may never have crossed his lips before. When all is said and done, we poor suffering mortals suffer, mentally at least, in-so-far as we are unable to give and receive love and in-so-far as our primitive needs for shelter, food and survival are threatened, either in actuality or in fantasy. These are the things that are most vital to us and that we are least ready to talk about. The inwardness of a life will not be captured by a questionnaire or by a rubber stamp sort of history.

When I was an intern we were brought up to take just such histories. We would approach a patient and after recording his complaint in his own language, we would write the letters F.H. for family history. That was quickly disposed of. The patient's F. was l & w, but his M. had unfortunately d'd of typhoid fever. A number of S's and B's were usually l & w, or a couple might have d'd in infancy. And then the ritual was to say that the F.H. was otherwise "non-contributory" (a truly fabulous misconception) and that there was no tuberculosis (later we added "or known exposure") or malignant disease in the family.

There was no discussion of how old the patient was when his mother died. What sort of person was she? Who took her place? How did his father react to the loss of his wife? And these infants who died, what did he know about them? How old was he when they died? Does he remember them? Was their death a threat to him? In other words, a good history must constantly be concerned with relationships because life is concerned with relationships.

We were nothing if not thorough but we had a genius for leaving out what was really important. No illness or accident would

escape us. We were as persistent as a cigar-smoking detective in a movie melodrama and about as subtle. I recall asking a young woman about her weight. What was her present weight, her weight last year, her heaviest? When I asked her what her lightest weight was and she said "5½ lbs." I began to get the notion that I was boring her by my third degree methods. I recall the chief attending physician asking a little boy of eight whether the pain in his groin radiated to his penis and testicles? The child looked up bewildered and said: "What's them?"

Our histories covered pages of carefully written foolscap and they bore about as much resemblance to the true story of the patient's life as a Mercator projection does to the contours of the earth's surface.

During World War I, for a time I was put in charge of a large medical ward in a base hospital in France. Although I was only a First Lieutenant, casual officers, out-ranking me by several grades, were assigned to this ward for instruction in physical diagnosis. One of them had the habit of turning in long, rambling histories that stretched out interminably and arrived nowhere. I urged this officer as tactfully as I could to stick to the essentials. The next history that he wrote up was a short one. It read this way:

Complaint: Abdominal pain.

Past History: Kicked by a steer.

Diagnosis: Tonsillitis.

This is an excellent caricature of many medical histories. We have a tendency to forget that patients are human beings with human problems to worry them, and that these problems have a bearing on all illness, whether we call it functional or organic.

Our aim in taking a medical history is no longer only to find an etiologic agent and then to devise means of exorcising it. It is rather to discover what kind of individual we are dealing with, what are his strengths and weaknesses, his assets and liabilities, what his patterned reactions under stress. For this purpose we need to review his life, to inquire with special care into those events that led up to illness.

These are the data with which the psychotherapist operates. He depends still on the interview method, for this is the principal means by which the patient can discharge some of his pent up feelings. The doctor will be successful in proportion to his own free-

dom from anxiety, to his own self-knowledge, and to his understanding of the mechanisms which produce symptoms. He will avoid moral, prejudicial, dictatorial attitudes since these will serve only to increase feelings of guilt and fear. A good psychotherapist will have the capacity for *empathy*, that is, for feeling in to his patients' life situation without sentimental sympathy. Like a good surgeon he will be cool, but not callous; he will maintain his integrity without being indifferent. And, if he wishes to be effective he will cultivate and practise the habit of quiet, receptive listening, because this is at the heart of the psychotherapeutic process.

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### TRENDS IN THERAPY OF VAGINAL BLEEDING AT OR NEAR THE CLIMACTERIC

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It might appear contradictory to open a discussion of non-malignant bleeding in the climacteric by emphasizing the fact that the first and most important consideration is to establish definitely the fact of non-malignancy. This is such an obvious conclusion that I hesitate to elaborate on it. The statistics from institutions designated for the treatment of cancer report about 65% of their cases of postmenopausal bleeding as having cancer, and general hospitals about 50%; whereas, the percentage of cancer responsible for bleeding in the practice of the average physician will be so much lower than this as to lower his index of suspicion dangerously. This probably accounts for the tragically large number of advanced cases of cancer of the uterus which come for specific diagnosis and treatment after the "golden period" has been wasted by hormone and liver shots without adequate examination.

Barrett<sup>1</sup> has recently reported an analysis of a series of cases of postmenopausal bleeding which gives a good idea of the relative frequency of the usual causes. In his study there were six benign lesions of the vulva: two of Monilia, one of kraurosis, one combined Monilia and kraurosis, one of post-

radiation telangiectasis, and one of fissure associated with atrophic vulvovaginitis. There were twenty lesions of the vaginal wall: seven of senile vaginitis, three of trichomonas vaginitis, four of ulcers due to prolapse, three of ulcers due to pessaries, one of ulcer due to chemical, and two of fissures resulting from previous radiation. There were nineteen benign cervical lesions: eight due to chronic cervicitis, seven polyps of the cervix, two cervical fibroids, and two fissures. There were eighteen cases of bleeding from the fundus: one hyperplasia of the endometrium of unknown etiology, one hyperplasia associated with a granulosa cell tumor of the ovary, two submucous fibroids, two submucous endometrial polyps, one tuberculous endometritis, two pyometria of unknown etiology, and nine cases of bleeding associated with estrogen therapy.

This leaves twenty-five cases in the series in which bleeding was due to malignant disease: twenty of epidermoid carcinomas of the cervix, three adenocarcinomas of the fundus, one sarcoma of the fundus, and one primary carcinoma of the vaginal wall.

A complete list of the causes of non-malignant bleeding would also include: (1) the classical triad of syphilis, drugs, and trauma; (2) dermatitides, herpes and pellagra; and (3) systemic disease, such as blood dyscrasias, hypertension, arteriosclerosis, passive congestion, and hypothyroidism.

Read before the Northwestern Division of the Association, Florence, October 15, 1953.

1. Barrett, A. B.: Postmenopausal Bleeding From Benign Lesions of the Genital Organs, Kentucky M. J. 49: 247 (June) '51.

The bleeding due to vaginitis needs little comment. If the vaginal mucous membrane evinces atrophic changes it will respond well to estrogen suppositories. If it is due to *Monilia*, gentian violet is indicated. If it is due to *trichomonas* infection—everybody has his own pet treatment for this.

Ulceration due to pessary is usually self evident but removal of an imbedded pessary may become a difficult feat.

Not infrequently, in elderly women, adhesions from between abraded collapsed vaginal walls and the rupture of these adhesions at coitus or exertion may occasion profuse hemorrhage. Here again estrogen suppositories will promote healing.

Now we have arrived at the cervix where the lesions assume more surgical interest and importance. Here it is that I should like to make a plea for more conservatism than is generally practiced, according to my observation.

Obviously an ulcer on the cervix due to procidentia should be handled by vaginal hysterectomy but cervical polyps are amenable to much more conservative treatment. All cervical polyps should be removed and examined microscopically but the incidence of carcinoma in them is very rare. They are frequently the site of metaplasia but a follow-up of a large group has convinced TeLinde<sup>2</sup> and the gynecologists at Mayo Clinic<sup>3</sup> that they are benign. Undoubtedly, hundreds of panhysterectomies are done yearly in this country for these "cancer-like" lesions which can be eliminated by simple excision and cauterization.

In my experience most cervical polyps protrude from the cervical canal and many times it is impossible to know in the office whether they arise from the cervical canal or from the endometrium. In these cases simple twisting off of the polyp is inadequate investigative treatment and a D & C should be done to eliminate the possibility of endometrial polyposis or other lesions of the fundus which may be responsible for the bleeding.

Cervical stenosis may be responsible for discharge of blood as well as pus from the

resulting pyometrium. These cases are said to respond well to prolonged drainage.<sup>1</sup> Two out of the last three cases of pyometrium that I have encountered were due to small adenocarcinomas of the endocervix. One of these was missed on the first D & C. There is every reason to expect the cervical stenosis and pyometrium to recur after conservative treatment, even if it is on a benign basis. Therefore, I believe that in the absence of contraindications of a general nature these cases are best treated by hysterectomy.

Chronic cervicitis, without stenosis and pyometrium, presents an entirely different problem. Here again the educated cancerphobia of the female population has been made a target for a tremendous number of unnecessary panhysterectomies. Assuming that an adequate biopsy study has been made of the cervix, there will be a very small number of cervixes which will fail to respond favorably to stripping with the cautery, or in more extreme cases, to conization.

And now, still progressing cephalad in the genital tract, we come to the cases of bleeding manifestly coming from above the cervix. This includes endometrial polyps, submucous fibroids, endometrial hyperplasia due to ovarian tumors, endometrial hyperplasia due to systemic estrogen therapy, and that large nonspecific group of cases lumped under the term menopausal menorrhagia.

Endometrial polyps are easily missed with the curette but if a thorough exploration of the uterine cavity is made with sponge forceps before curettage most of them can be secured. The pathologist's report on this tissue has, in my experience, often been equivocal. If bleeding recurs after this procedure it is generally held that hysterectomy is indicated.

All writers of recent articles<sup>1, 2, 3, 4</sup> on the subject of this discussion have stressed the large number of patients who bleed because they have been given estrogens for one reason or another. This indiscriminate use of estrogens in the climacteric age is universally condemned by the professors, and almost universally practiced by the profession. If a patient who is bleeding from the uterus is known to have been receiving es-

2. TeLinde, R. W.: Postmenopausal Bleeding, *Mod. Med.* 1951, p. 87, Nov. 15.

3. Mussey, R. D., and Wilson, T. R.: Abnormal Uterine Bleeding After Middle Age, *J. Michigan M. Soc.* 1944, Feb.

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trogens it is recommended by most writers that these be withdrawn and a D & C done if bleeding persists or recurs as much as four weeks later.

When bleeding from the fundus is associated with submucous myomata, it is not necessarily caused by them. Furthermore, the exploring curette may fail to find the true source of bleeding because of the irregularities of contour caused by them.<sup>4</sup> For this reason, hysterectomy is always recommended.

Menopausal menometrorrhagia is the problem about which there exists the greatest difference of opinion regarding management. This problem is represented by the woman from thirty-five to sixty years of age whose menstrual life has not ceased but who presents herself for the treatment of prolonged and/or profuse vaginal bleeding at the time of her periods, between periods, or constantly. Careful examination indicated no visible or palpable abnormality. Blood studies have eliminated dyscrasias as a cause. There is no evidence of hypothyroidism. Obviously, a bimanual examination under anesthesia and a diagnostic curettage are mandatory. There are conflicting reports as to the efficacy of this procedure alone. Brewer reports it curative in one-third of his cases, while Schumann<sup>5</sup> reports it curative in 80%. Both recommend that in those cases where bleeding continues or recurs a total hysterectomy be done.

A table analyzing ninety cases of uterine bleeding and prepared by Schumann<sup>5</sup> is interesting in this regard.

- 14 cases were due to carcinoma of the uterus,
- 12 to hyperplasia of the endometrium,
- 23 to atrophic endometrium,
- 10 to polyps,
- 3 to senile endometriosis (atrophic),
- 1 to submucosal myoma,
- 1 to normal growth phase endometrium, and
- in
- 26 patients an insufficient amount of endometrium could be curetted for adequate study.

Until recently there has been a larger body of opinion which would favor irradiation treatment for the patients in whom curettage has proved ineffective. Intrauterine radium is generally preferred over x-ray therapy for two reasons: (1) it does not depend entirely on its effect upon the

ovaries as follicular hormones can be demonstrated in the blood afterward;<sup>6</sup> and (2) there is less tendency to high vaginal stricture and cervical stenosis after radium.<sup>6</sup> Randall<sup>7, 8</sup> and Mussey<sup>3</sup> of Mayo Clinic report 92% satisfactory results in a five year follow-up on forty-seven patients who received intrauterine radium in dosages over 1000 mc. However, 14.8% of these patients experienced severe menopausal symptoms. Cannon<sup>9</sup> reports 92.2% satisfactory results from irradiation in a series of over 100 cases. He does not list the unsatisfactory results, but from my own experience I would expect them to be: (1) cervical stenosis with hematometrium, (2) cervical stenosis with pyometrium, and (3) recurrent bleeding.

When it is realized that this procedure is not without morbidity and mortality, and that 0.5 to 1% of these patients will subsequently develop carcinoma of the uterus, more and more surgeons are inclined to agree with the point of view of Tyrone<sup>10</sup> who recommends total abdominal or vaginal hysterectomy for these patients. This is the ideal treatment in patients whose general condition does not contraindicate surgery: (1) it is certain to stop the bleeding permanently; (2) it will not be attended by the annoying neurogenic symptoms of the menopause; and (3) it eliminates an organ which has already given evidence of being a bad actor and which might subsequently become the site of malignant disease.

With all this discussion of definitive treatment for menopausal bleeding we must not lose sight of the fact that, after a curettage has demonstrated the absence of malignancy, many patients who subsequently bleed will not do so excessively and some will respond to thyroid medication even in the presence of a normal metabolic rate.

I would like to emphasize in closing that (1) not all is cancer that bleeds; and (2) not all that bleeds is surgical, but it must be proved not to be cancer.

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## HEART DISEASE IN PREGNANCY

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In considering heart disease in pregnancy, it is helpful to review briefly the added demands placed upon the heart in pregnancy and when these occur. The increased circulatory load depends on several factors. In addition to the increase in body weight of the pregnant female, there is also a definite increase in blood volume. This increase reaches 45% above normal by the eighth month of pregnancy, and then progressively decreases to only 30% above normal at term. Blood volume then returns to normal within one week after delivery. In addition to the increased blood volume, there is an actual increase in the circulatory rate which is thought to be due to the opening of arteriovenous communications in the placenta. Pregnant women also have a tendency to sodium retention which is apparently due to the higher estrogen and androgen titers, and to the increase in the antidiuretic factor. Finally, the oxygen consumption increases from 15% to 25% above normal during pregnancy.

Strangely enough, in spite of the fact that the diaphragm is elevated, there is no decrease in the vital capacity, except in the case of very short females with a very large fetus. In most cases, there is even slight increase in the vital capacity. For this reason any significant decrease in vital capacity may be a sign of diminishing cardiac reserve.

In view of the many varying factors involved, it is not hard to understand why cardiac decompensation in pregnancy is not always directly related to the severity of the heart disease, even though there is usually a good correlation. Occasional cases have been noted where cardiac decompensation has occurred in a patient who showed no sign of organic heart disease before pregnancy, and in whom no clinically detectable evidence of heart disease could be shown after the pregnancy was over.

### HEART RESPONSE TO THE ADDED DEMANDS OF PREGNANCY

The heart responds to the increased load of pregnancy by an increased cardiac output. This is accomplished either by an in-

creased stroke volume or increased cardiac rate, or both. The increase in cardiac output usually begins about the twelfth week and increases slowly until the 24th week of pregnancy. From the 24th to the 36th week there is a fairly rapid increase in cardiac output, and by the 36th week it has reached 40% to 50% above normal. It is, therefore, easy to see that this is the worse possible time for the pregnancy to be terminated, and all possible measures should be taken to prevent the added strain of delivery or interruption procedures at this time. From the 36th week to term the cardiac output progressively decreases to about 30% above normal. This begins to decrease again twenty-four hours after delivery and reaches normal in one week.

### THE EFFECT OF LABOR ON THE HEART

Labor is a definite added burden to the heart, but it is less than the maximum burden of pregnancy at the 36th week. For this reason decompensation is rare if it has not occurred previously, unless some new factor is added such as toxemia, infection, or anemia. In the case of heart failure which is precipitated by toxemia, infection, or anemia, the mortality is high.

If cardiac decompensation is already present when the patient goes into labor, then the condition is usually made worse because of the increase in pulse rate, blood pressure, and venous pressure with each pain. In addition to this, ergot derivatives are frequently used and these further increase the venous pressure. It should be noted here that intravenous saline or blood given to these cardiacs may precipitate severe failure.

### IS CAESAREAN SECTION PREFERABLE TO NORMAL DELIVERY?

It is now generally agreed that the answer to this question is "No." Most cardiologists feel that normal delivery is less of a strain, if there are no mechanical obstructions present. Caesarean section should be done only where it is necessary for obstetrical reasons, or in severe hypertension, toxemia, or coarctation of the aorta. Coarctation of the aorta is a rather special problem in that the aorta may rupture during labor, and therefore caesarean section is a safer procedure. If caesarean section is

necessary, ether-oxygen anesthesia should be used in a closed system with a high concentration of oxygen.

#### EFFECT OF PREGNANCY ON THE LONG TERM COURSE OF HEART DISEASE

There is no proven permanent aggravation of heart disease by pregnancy except in the cases of toxemia producing permanent hypertension, or the development of bacterial endocarditis which produces a permanent valve damage, or in the cases pushed over into decompensation by the pregnancy.

#### EFFECT OF HEART DISEASE ON THE PREGNANCY

**Maternal Mortality:** The maternal mortality is five times higher in cardiacs in general than in non-cardiacs. This higher mortality is principally in the group of cardiacs classed as "unfavorable," where it is 18%. Because of the many varied factors involved, the classification into "favorable" and "unfavorable" groups must always be a somewhat rough estimate. But in the majority of cases, this is found to be an extremely useful method of determining the proper course of treatment. The "favorable group" are those cardiacs with slight or no limitation of ordinary physical activity before pregnancy. The "unfavorable group" are those with any of the following: (1) marked limitation of physical activity before pregnancy, (2) a history of previous cardiac decompensation, (3) appreciable cardiac enlargement, (4) auricular fibrillation, (5) appreciable aortic regurgitation, (6) marked mitral stenosis, (7) previous coronary thrombosis, (8) complete AV block (most cases—this does not apply to the congenital variety), (9) all cyanotic congenital heart disease, (10) heart disease with concomitant diabetes, hypertension, nephritis, or tuberculosis. Many men feel that any female over the age of thirty-five who has heart disease should be placed in the "unfavorable group" since statistically they have more difficulty than younger women. In this "unfavorable group" the highest mortality is in those with auricular fibrillation, where it is 33%.

**Fetal Mortality:** The fetal mortality in the "unfavorable group" listed above is 50%. Heart disease predisposes to prematurity because of the increased incidence of hemorrhage, because of the placental changes which frequently occur, and because of the occasional arteriosclerosis of decidual vessels.

#### EVALUATION OF THE HEART DURING PREGNANCY

Evaluation of the heart during pregnancy may be quite difficult. Physiologic murmurs, especially systolic pulmonic and mitral murmurs, are frequently heard in normal pregnancy, as are third heart sounds. The heart may appear enlarged on physical examination and in the x-ray, due to the elevated diaphragm pushing it upward and over to the left. This same change in position may cause changes in the electrocardiogram. Non-cardiac edema is a frequent occurrence in pregnancy, and may add to the diagnostic problems. The determination of a normal venous pressure in the veins of the arms is helpful in differentiating this from the edema of heart failure. Dyspnea and orthopnea are common in the last half of pregnancy, as are palpitation, tachycardia, and frequent premature beats. Basal atelectatic rales are often heard due to elevation of the diaphragm. The white count and sedimentation rate are often elevated in normal pregnancy.

#### DIAGNOSIS OF CARDIAC DECOMPENSATION DURING PREGNANCY

There are several signs which are especially valuable in diagnosing heart failure during pregnancy. Coughing, which is not due to respiratory infection and which is made worse on exertion, is a frequent sign. The determination of a decreased vital capacity is most helpful, as are definitely moist basal rales. Acute paroxysmal dyspnea with pulmonary edema can be diagnostic. An enlarged tender liver, or a sudden weight gain which is lost with mercurial diuresis, is significant. A definitely increased venous pressure is a valuable sign. A respiratory rate of 24 or faster with a persistent tachycardia of 110 or more, in patients who are sedated or quiet, is very suggestive—these last two signs are especially helpful during labor when many of the others are difficult to determine.

#### TREATMENT

**Interruption:** Except where religious beliefs or the wishes of the patients solve this problem for you, one of the most difficult questions to decide is when to forbid or terminate pregnancy. Most of those listed in the "unfavorable group" above should be forbidden to become pregnant, or terminated early if they do. Any cardiacs who decompensate in the first five months of pregnancy should be treated for their decompensation.

pensation and terminated. Many men believe that three living children is a contraindication to further pregnancies in all cardiacs, because there is always some added risk in these patients, and because much of the strain is in caring for the children after they are born.

If pregnancy is to be terminated in the first trimester, this should be done by dilatation and curettage. If it is done from the third to the fifth luna month of pregnancy, it should be by an abdominal hysterotomy, at which time a tubal ligation should be seriously considered.

**Supportive:** Pregnancy should never be interrupted after the sixth luna month unless for a major complication such as toxemia. After the sixth month the mortality for interruption procedures is much higher than for supportive treatment and carrying the patient to full term. These patients should be treated as any other cardiac, with rest, digitalization, low sodium diet, mercurial diuretics, etc. It is most important to see them early and follow them carefully. Once failure develops, the patient should be on bedrest for the remainder of the pregnancy.

**Labor:** In the case of rheumatic or congenital heart disease, penicillin should be given during labor and for one week postpartum to prevent the development of bacterial endocarditis. The orthopneic position should be used during labor and delivery. Adequate sedation is important. The second stage should be shortened with low forceps in most cases. If the patient develops a respiratory rate over 24 a minute with a tachycardia of 110 or faster, she should be treated immediately as incipient cardiac decompensation. If not previously digitalized, this should include rapid digitalization. The anesthesia of choice is again ether-oxygen in a closed system with a high concentration of oxygen.

**Postpartum:** Postpartal care should include rest, extremely careful observation, and great caution about the administration of parental fluids. It should be pointed out again that intravenous saline or blood is especially likely to precipitate severe and sometimes fatal pulmonary edema.

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- The Health Record for 1953**—According to statisticians of the Metropolitan Life Insurance Company, the health records of the people of the United States were excellent during 1953. The estimated death rate for the nation in 1953 was 9.6, or approximately the same as for the preceding year. This too was the sixth consecutive year in which the death rate in this country was below 10 per 1,000. This rate continued low in spite of the outbreak of respiratory disease early in 1953, and a severe heat wave in the summer, which took their toll especially among people with chronic disease.
- The death rate from tuberculosis was under 13 per 100,000 population, which is perhaps a decline of one fourth from the preceding year. It was stated that this rate from tuberculosis is approximately one half of that of 1949, and ten years ago it was three times as high. Infant mortality was at a new low, being estimated at 28 per 1,000 live births, and the maternal mortality was reduced to less than 6 per 1,000 live births. It was stated that during the past five years alone maternal mortality was reduced 50%, and about 75% in the last 10 years.
- Poliomyelitis, with 36,000 cases reported during 1953, showed a decline of approximately 40% over the preceding year, and case fatality has likewise been declining. The death rate for 1953 was about one per 100,000 population. A small increase was noted in mortality from chronic diseases of the heart, kidneys, arteries and from cancer. This increase is most likely due principally to the ever increasing number of older persons in the country. The diabetes death rate was approximately the same as for the previous year. A slight improvement occurred in the control of accidents during 1953, even though there is a continued increase in the number of cars and in total automobile mileage. A slight decrease was noted in the occupational accidents during the year. The prospects seem good for betterment of the nation's health through the reduction of preventable diseases and accidents, and the control of degenerative disease. The statisticians believe that the favorable health record for 1953 can be attributed in large part to the steady gains and great efficiency of medical and public health services, to research in these fields, and to the high standards of living of the people of the United States.—*Editorial, Illinois M. J., Feb. '54.*

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S. W. Windham ..... Dothan  
T. J. Payne, Jr. .... Jasper  
W. R. Carter ..... Repton

SECRETARY-TREASURER

Douglas L. Cannon ..... Montgomery

THE STATE BOARD OF CENSORS

E. V. Caldwell, Chm. .... Huntsville  
J. G. Daves ..... Cullman  
C. E. Abbott ..... Tuscaloosa  
Robert Parker ..... Montgomery  
E. G. Givhan, Jr. .... Birmingham  
J. D. Perdue ..... Mobile  
John W. Simpson ..... Birmingham  
J. Paul Jones ..... Camden  
John L. Branch ..... Montgomery  
J. O. Finney ..... Gadsden

STATE HEALTH OFFICER

D. G. Gill ..... Montgomery

DELEGATES AND ALTERNATES TO THE AMERICAN  
MEDICAL ASSOCIATION

Delegate—C. A. Grote ..... Huntsville

Alternate—E. Bryce Robinson, Jr. .... Fairfield  
(Term: January 1, 1953-December 31, 1954)

Delegate—J. Paul Jones ..... Camden

Alternate—D. G. Gill ..... Montgomery  
(Term: January 1, 1954-December 31, 1955)

THE MONTH IN WASHINGTON

Some parts of the Eisenhower administration's broad health program are making good progress on Capitol Hill, while others are virtually standing still or bogged down in the technical complications that are always a threat to new legislation. Well ahead of the other proposals, and possibly destined for enactment, are bills to broaden the scope of the Hill-Burton hospital construction law and to liberalize income tax deductions for medical expenses.

The House Interstate and Foreign Commerce Committee, under chairmanship of Rep. Charles Wolverton (R., N. J.), wound up its long fact-finding study of voluntary health insurance plans and immediately started hearings on the Hill-Burton changes. The purpose is to amend the Hill-Burton law so that it can be used to disburse federal grants to states for construction of health facilities that do not qualify as "hospitals." The administration is anxious to stimulate the building of more nursing homes, hospitals for the chronically ill, diagnostic or treatment centers and rehabilitation facilities.

An initial appropriation of \$2 million would be authorized for surveys and planning, and \$60 million annually for three years of construction. Per capita income as well as population would be used to determine a state's share, as under the present Hill-Burton program.

At the House hearing, crowded into two days, the construction program was indorsed at least in principle by every witness, except the representative of the American Association of Nursing Homes. Because the program is limited to non-profit sponsors, members of this group could not receive grants. Their spokesman said long-term loans through the Small Business Administration would help solve their problem.

The American Medical Association recommended passage of the bill, but urged that facilities for the chronically ill and the handicapped be "part of or near a conventional hospital," and that facilities of all types be open to the entire community without discrimination, as in the present Hill-Burton law. (It is likely hearings also will be held on this legislation in the Senate.)

The House Ways and Means Committee, meanwhile, was giving its approval to a new income tax provision that would allow the

deduction of medical expenses if they exceed 3% of adjusted gross income, rather than 5% under present law. The present maximum limitation would be doubled, and the deduction of travel expenses allowed where travel is prescribed by a physician. These changes—a long-time AMA goal—are embodied in the omnibus tax readjustment bill.

President Eisenhower's proposal for federal reinsurance of voluntary health plans has not been able to follow the steady course on which it first appeared to be embarked. At the House hearings, none of the spokesmen for the large organizations in the health fields—AMA, Blue Cross and Shield, American Hospital Association—was willing to indorse the plan. Like the AMA spokesmen, most of them wanted first to examine the actual administration bill, which at that time had not been introduced. From the Blue Cross, however, came a suggestion that the idea be tried out experimentally.

Spokesmen for national labor organizations expressed mixed reactions, with some maintaining that reinsurance was a poor substitute for what they believe the country really needs—national compulsory health insurance.

The administration's health budget for the next fiscal year, starting next July 1, calls for a slight overall reduction. The regular Hill-Burton program, currently operating on \$65 million, would get \$50 million (any appropriation to start the proposed expanded construction would be in addition). Relatively sharp reductions would be made in funds for venereal, tuberculosis and communicable disease control, in line with the policy of shifting this responsibility to the states. The various research institutes would receive about what they are now spending.

One of the few new items is for \$7.8 million, estimated as necessary for the extra cost of enlarging the federal program of vocational rehabilitation. Legislation authorizing the expansion is awaiting Congressional action. The administration hopes gradually to increase the number of persons rehabilitated annually from the current 60,000 to 200,000. While the program is being stepped up, one of its goals would be to induce states to increase their spending until eventually their appropriations match the federal. Like most of the President's health

program, the rehabilitation effort has the support of the AMA.

Conferences between AMA officials and administration leaders are continuing. Latest sessions were with Secretary Hobby, concerning her department's legislative plans; with VA Administrator H. V. Higley, on treatment of non-service connected cases; and with Adm. Arthur W. Radford, chairman of the Joint Chiefs of Staff, Dr. Frank Berry, Assistant Defense Secretary for health and medical matters, and Dr. Howard A. Rusk, chairman of the Health Resources Advisory Committee, on medical care for military dependents. Representing the AMA at one or more of the meetings were Drs. Walter B. Martin, David B. Allman, Gunnar Gundersen, Louis Orr, James C. Sargent, W. L. Crawford, George F. Lull, Ernest B. Howard and Frank E. Wilson.

Earlier, AMA representatives talked over legislation with President Eisenhower at the White House.

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#### DEATH FROM PENICILLIN INJECTIONS

There has been an increasing number of reports of severe anaphylactoid reactions to penicillin administration.<sup>1</sup> Some of these have resulted in death to the patient. For the most part, these reactions have occurred in individuals with other evidence of allergic reactions, such as hay fever and asthma. However, it is becoming increasingly apparent that previously sensitized individuals to penicillin therapy are equally susceptible.

The widespread use of this antibiotic, a large part of which has been used injudiciously, has resulted in unnecessary sensitization of a major part of the population to penicillin-containing products. Such unrestricted use is rendering future penicillin therapy hazardous. Therefore, serious reactions from the use of this drug may be expected to occur more frequently in the future.

The specific penicillin preparation implicated in these reactions is of importance; a majority have occurred after the use of the procaine preparations. The penalthamate

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1. Welch, H.; Lewis, C. N.; Kerlan, I., and Putnam, L. E.: Acute Anaphylactoid Reactions Attributable to Penicillin, *Antibiotics and Chemotherapy*. 3: 891-895 (Sept.) 1953.

(Neo-penil) preparation has also been implicated in a number of instances.

The occurrence of these serious reactions emphasizes again the necessity for clear-cut indications for the use of this antibiotic. It is only through such a practice that we can

prevent undue sensitization of a large number of our population. Because patients with a history of allergic diseases are more likely to have anaphylactoid reactions, special care should be taken in treating such individuals with this antibiotic.

H. L. H.

**PROGRAM OF THE ANNUAL SESSION  
OF THE  
MEDICAL ASSOCIATION OF THE STATE OF ALABAMA  
MOBILE**

**APRIL 15, 16, 17, 1954  
ADMIRAL SEMMES HOTEL**

**GENERAL INFORMATION**

All sessions of the Association will be at the Admiral Semmes Hotel, convention headquarters.

The maximum time consumed by essayists must not exceed twenty minutes. This time limit, however, does not apply to invited guests. It is suggested that the salient features of papers be presented within this time, reserving the complete elaboration for publication in the Journal of the Association.

All papers read before the Association must be deposited with the Secretary when read; otherwise, they will not be published.

Papers will be called in the order in which they appear on the program. Should the reader be absent when called, his paper will be passed, and called again when the program is concluded.

**THE FIFTY YEAR CLUB**

According to custom, physicians who graduated fifty years ago will be honored by the Association at this meeting. Their names appear in the program.

**HOST TO THE ASSOCIATION**

The Mobile County Medical Society

**OFFICERS**

M. Vaun Adams, *President*  
Vivian H. Hill, *President-Elect*  
Carlton W. Winsor, *Secretary*  
C. A. Lightfoot, *Treasurer*

**BOARD OF CENSORS**

William L. Sellers, Jr., *Chairman*  
Cecil L. Ross                      C. V. Partridge  
J. C. O'Gwynn, Jr.                A. J. Brown

**COMMITTEES**

John Day Peake, *General Chairman*

**Hotels**

Chas. L. Rutherford, *Chairman*  
John C. Hope, Jr., *Co-Chairman*  
J. D. Perdue                      Daniel F. Sullivan  
John W. Donald

**Commercial Exhibits**

E. L. McCafferty, Jr., *Chairman*  
Paul M. Goldfarb, *Co-Chairman*  
Seldon H. Stephens              Dan W. Burke, Jr.  
Wm. J. Atkinson, Jr.              Henry M. Dismukes

**Entertainment**

J. H. Little, *Chairman*  
George W. Newburn, Jr., *Co-Chairman*  
A. D. Henderson                  Claude M. Warren, Jr.  
William G. Fonde'                  Joseph R. Mighell, III  
O. M. Otts, Jr.

**Finance**

C. A. Lightcap, *Chairman*  
J. C. O'Gwynn, Jr., *Co-Chairman*  
Guy C. Oswalt

**Hospital Visitation**

A. J. Brown, *Chairman*  
L. L. Brown, *Co-Chairman*  
Charles D. Terry                  J. Mac Bell, Jr.  
Philip P. Gilchrist                M. H. Dodson

**Scientific Exhibits**

Earl B. Wert, *Chairman*  
Ernest G. DeBaKey, *Co-Chairman*  
Howard S. J. Walker, Jr. Robert O. Harris, III  
Warren A. Yemm                  Henry M. Gewin  
L. V. McVay, Jr.

**Motion Pictures, Lights and Lantern Slides**

H. N. Webster, Jr., *Chairman*  
James F. Dumas, *Co-Chairman*  
T. J. Bender, Jr.                  Dixon Meyers  
Charles M. Walsh, III

**Transportation**

Frank England, *Chairman*  
Walter H. Minor, *Co-Chairman*  
Samuel P. Marshall              Frank G. Keller  
Edward A. Dudley

Publicity

Victor T. Hudson, *Chairman*  
A. M. Cowden, *Co-Chairman*  
S. S. Murphy

Reception Committee

J. M. Weldon, *Chairman*  
J. D. Perdue, *Co-Chairman*  
Emmett B. Frazer      G. O. Segrest  
W. C. Hannon      Norborne R. Clarke, Jr.  
A. M. Cowden      W. Leslie Heiter  
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Joseph M. Donald ..... Birmingham

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S. W. Windham ..... Dothan  
T. J. Payne, Jr. .... Jasper  
W. R. Carter ..... Repton

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Douglas L. Cannon ..... Montgomery

Director of Public Relations

W. A. Dozier, Jr. .... Montgomery

The State Board of Censors

E. V. Caldwell, Chm. .... Huntsville  
J. G. Daves ..... Cullman  
C. E. Abbott ..... Tuscaloosa  
Robert Parker ..... Montgomery  
E. G. Givhan, Jr. .... Birmingham  
J. D. Perdue ..... Mobile  
John W. Simpson ..... Birmingham  
J. Paul Jones ..... Camden  
John L. Branch ..... Montgomery  
J. O. Finney ..... Gadsden

State Health Officer

D. G. Gill ..... Montgomery

Delegates and Alternates to the American  
Medical Association

Delegate—C. A. Grote ..... Huntsville  
Alternate—E. Bryce Robinson, Jr. .... Fairfield  
(Term: January 1, 1953-December 31, 1954)  
Delegate—J. Paul Jones ..... Camden  
Alternate—D. G. Gill ..... Montgomery  
(Term: January 1, 1954-December 31, 1955)

PROGRAM

First Day, Thursday, April 15

Morning Session

9:00 A. M.

Call to order by the President—

*J. O. Morgan, Gadsden.*

Invocation—

*Rev. Eugene Peacock, St. Francis Street Methodist Church, Mobile.*

Addresses of Welcome—

*Hon. Henry R. Luscher, Mayor-President, City of Mobile.*

*M. Vaun Adams, President,  
Mobile County Medical Society.*

PART I

REPORTS OF STANDING COMMITTEES

1. Medical Service and Public Relations—  
*J. O. Finney, Chairman.*
2. Maternal and Child Health—  
*T. M. Boulware, Chairman.*
3. Cancer Control—  
*John Day Peake, Chairman.*
4. Postgraduate Study—  
*Ralph McBurney, Chairman.*
5. Mental Hygiene—  
*Jack Jarvis, Chairman.*
6. Prevention of Blindness and Deafness—  
*Alston Callahan, Chairman.*
7. Tuberculosis—  
*Paul W. Auston, Chairman.*
8. Physician-Druggist Relationships—  
*W. M. Salter, Chairman.*
9. Anesthesiology—  
*Alfred Habeeb, Chairman.*
10. Industrial Medicine—  
*D. O. Wright, Chairman.*
11. Publishing Committee—  
*Douglas L. Cannon, Chairman.*
12. Blue Cross-Blue Shield—  
*J. P. Collier, Chairman*  
*J. E. Moss, Co-Chairman*

REPORT OF SPECIAL COMMITTEE

On Medical Care Program, UMW—

*E. Bryce Robinson, Chairman.*

REPORTS OF OFFICERS

Secretary-Treasurer—

*Douglas L. Cannon, Montgomery.*

Vice-Presidents—

- (1) Northeastern Division  
*Hugh Gray, Anniston.*
- (2) Southeastern Division  
*S. W. Windham, Dothan.*
- (3) Northwestern Division  
*T. J. Payne, Jr., Jasper.*
- (4) Southwestern Division  
*W. R. Carter, Repton.*

The President's Message—

*J. O. Morgan, Gadsden.*

## PART II

## SCIENTIFIC PROGRAM

1. *The Diagnosis of Diabetes Mellitus*—  
WILLIAM L. SMITH,  
Montgomery, Alabama.
2. *Trauma About the Face*—  
JOHN F. CROSBY, JR.,  
Mobile, Alabama.
3. *Management of Peripheral Arterial Injuries*—  
FREDERICK W. SMITH,  
Huntsville, Alabama.
4. *Mental Health in Alabama*—  
J. S. TARWATER,  
Superintendent, Alabama State Hospitals,  
Tuscaloosa, Alabama.



## Afternoon Session

Thursday, April 15th

2:00 P. M.

1. *Hormones and Body Water*—  
AMOS C. GIPSON,  
Gadsden, Alabama.
2. *Pediatric Care by the General Practitioner*—  
WALDO E. NELSON,  
Professor of Pediatrics,  
Temple University Medical School,  
Philadelphia, Pa.
3. *Abnormal Uterine Bleeding*—  
WILLARD M. ALLEN,  
Washington University Sc. of Medicine,  
St. Louis, Mo.
4. Panel: *Thrombo-Embolic Disease and Its Complications*—  
Moderator:  
CHAMP LYONS,  
Professor of Surgery,  
Medical College of Alabama,  
Birmingham, Alabama.  
(A) *Anticoagulation Therapy*—  
WALTER B. FROMMEYER,  
Veterans Administration Hospital,  
Birmingham, Alabama.  
(B) *Ligation Method of Therapy*—  
STERLING EDWARDS,  
Medical College of Alabama,  
Birmingham, Alabama.  
(C) *The Problem of the Postphlebitic Syndrome*—  
ARTHUR I. CHENOWETH,  
Birmingham, Alabama.

Second Day, Friday, April 16th

## Morning Session

9:00 A. M.

1. *The Management of Bronchopulmonary Disease in Private Practice*—  
JOHN E. MOSS,  
Mobile, Alabama.
2. *Management of Anemia in General Practice*—  
THOMAS C. DONALD, JR.,  
Anniston, Alabama.
3. *The Doctor as an Individual*—  
M. L. MEADORS,  
Executive Secretary and Counsel,  
South Carolina Medical Association,  
Florence, South Carolina.
4. *Care of the Premature Baby During Labor and Delivery*—  
J. ROBERT WILLSON,  
Professor of Obstetrics and Gynecology,  
Temple University School of Medicine,  
Philadelphia, Pa.
5. The Jerome Cochran Lecture:  
*Operations for Coronary Disease*—  
CLAUDE S. BECK,  
Professor of Cardiovascular Surgery,  
Western Reserve Univ. Sc. of Medicine,  
Cleveland, Ohio.
6. Recognition of the Fifty Year Club.
7. Announcement of Vacancies in the College of Counsellors.
8. Meeting of Counsellors and Delegates for the Purpose of Making Nominations to Fill the Vacancies in the College of Counsellors.



## Afternoon Session

Friday, April 16th

2:00 P. M.

1. *Radiation Therapy as Relates to General Practice*—  
DAVID CARROLL,  
Assistant Professor of Radiology,  
Univ. of Tenn. Col. of Medicine,  
Memphis, Tenn.
2. *Mechanical Basis of Low Back Pain*—  
THEODORE J. BENDER, JR., and  
E. CRAMPTON HARRIS, JR.,  
Mobile, Alabama.
3. *Cryptorchism*—  
LLOYD LEWIS,  
Professor of Urology,  
Georgetown Univ. Sc. of Medicine,  
Washington, D. C.
4. Panel: *Arthritis*—  
Moderator:  
J. O. FINNEY,  
Gadsden, Alabama.

(A) *Research Activities as Relates to Collagen Disorders—*

HOWARD L. HOLLEY,  
Birmingham, Alabama.

(B) *Clinical Aspects of Arthritis—*

JOHN M. McMAHON,  
Bessemer, Alabama.

(C) *Physical Therapy and Rehabilitation in Arthritis—*

F. F. SCHWARTZ,  
Birmingham, Alabama.



**Last Day, Saturday, April 17th**

9:00 A. M.

Business Meeting of the Association sitting as the Board of Health of the State of Alabama:

- (1) Report of the Board of Censors;
- (2) Revision of the Rolls:
  - (a) County Societies,
  - (b) Counsellors,
  - (c) Correspondents;
- (3) Election and Installation of Officers.

Adjournment

**THE FIFTY YEAR CLUB**

**Class of 1954**

(To whom Certificates of Distinction will be awarded on Friday morning at the conclusion of the Jerome Cochran Lecture.)

David G. Andress .....	Madrid
Norman L. Broach .....	Pine Level
Eugene Callaway .....	Selma
Frank L. Chenault .....	Decatur
John W. Crowder .....	W. Blocton
William D. Fonville .....	Pasadena, Calif.
John E. Garrison .....	Birmingham
William G. Hairston .....	Birmingham
Robert E. Hale .....	Bellamy
Hugh W. Hill .....	Carrollton
Henry W. Horsley .....	Boaz
Urban L. Jones .....	Brooklyn
Lucien Tennent Lee .....	Selma
Thomas M. Littlepage .....	Butler
Richard S. Lucius .....	Eutaw
David A. Mason .....	Selma
Joseph C. McDaniel .....	York
William A. Minnich .....	Mobile
Charles M. Nice .....	Birmingham
William L. Orr .....	Ozark
Albert M. Richards .....	Mt. Vernon
Edmond W. Rucker .....	Birmingham
Walter F. Scott .....	Birmingham
James H. Sentell .....	New Hope
Charles S. Strock .....	Verbena
Thomas F. Taylor .....	Tuskegee
William A. Thompson .....	Citronelle
Oscar O. Underwood .....	Phil Campbell
John S. Williamson .....	Verbena

**VACANCIES IN THE COLLEGE OF COUNSELLORS**

Vacancies that will present in the College of Counsellors at this meeting of the Association are as follows and for the reasons set forth:

2nd Congressional District—2. W. R. Carter is to be elevated to Life Counsellor; D. G. Gill's first term of seven years has expired.

3rd Congressional District—4. P. P. Salter is deceased; C. T. Jones has resigned; G. R. Smith is to be elevated to Life Counsellor; E. L. Gibson's second term of seven years has expired.

4th Congressional District—5. W. F. Harper is deceased; J. F. Alison and W. M. Salter are to be elevated to Life Counsellors; the second terms of seven years of J. F. Sewell and G. G. Woodruff have expired.

5th Congressional District—2. J. O. Finney's first term of seven years has expired; A. L. Isbell's second term of seven years has expired.

6th Congressional District—2. M. H. Eskew is to be elevated to Life Counsellor; J. P. Collier's second term of seven years has expired.

7th Congressional District—2. B. W. McNease's first term of seven years has expired; A. C. Jackson's second term of seven years has expired.

8th Congressional District—3. H. M. Simpson has resigned; the first terms of seven years of H. A. Darby and W. G. McCown have expired.

9th Congressional District—1. W. A. Clyde's first term of seven years has expired.



**COMMERCIAL EXHIBITORS**

Booth  
Number

- 1 General Electric Co.
- 2 G. D. Searle & Co., P. O. Box 5110, Chicago 80, Ill.
- 3 U. S. Vitamin Corp., 250 E. 43rd St., New York 17, N. Y.
- 4 Coca Cola Co., P. O. Drawer 1734, Atlanta 1, Ga.
- 5 National Drug Co., 4663-85 Stenton Ave., Philadelphia 44, Penn.
- 6 Miles Reproducer Co., 812 Broadway, New York 3, N. Y.
- 7 Abbott Laboratories, North Chicago, Ill.
- 9 Sanna Milk Co., Box 688, Madison 1, Wisconsin
- 10 Wyeth Laboratories, 1401 Walnut St., Philadelphia 2, Pa.
- 11 Ames Co., Elkhart, Indiana.
- 12 The William S. Merrell Co., Cincinnati 15, Ohio.
- 13 Blue Cross-Blue Shield, 2119 1st Ave. No., Birmingham 3, Ala.
- 14 McKesson & Robbins, Inc., 1706-08 First Ave., Birmingham 3, Ala.
- 15 J. A. Majors Co., 1301 Tulane Ave., New Orleans 12, La.
- 16 Eli Lilly & Co., Indianapolis 6, Indiana.
- 17 Hoffman-La Roche, Inc., Roche Park, Nutley 10, New Jersey.

- 18 Winthrop-Stearns, Inc., 1450 Broadway,  
New York 18, N. Y.
- 19 The Stuart Co., 35 East Wacker Drive, Chi-  
cago, Illinois.
- 20 A. H. Robins Co., 1407 Cummings Drive,  
Richmond 20, Va.
- 21 Parke, Davis & Co., Joseph Campau Ave-  
nue At The River, Detroit 32, Michigan.
- 22 Lederle Laboratories, 30 Rockefeller Plaza,  
New York 20, N. Y.
- 23 Pet Milk Co., Saint Louis, Missouri.
- 24 Van Antwerp Surgical, Mobile, Ala.
- 25 Mead Johnson & Co., 805 Peachtree St., N.  
E., Atlanta, Georgia.
- 26 The S. E. Massengill Co., Bristol, Tennes-  
see.
- 27 Burroughs Wellcome & Co., 1 Scarsdale  
Road, Tuckahoe 7, N. Y.
- 28 Pfizer Laboratories, 630 Flushing Ave.,  
Brooklyn 6, New York.
- 29 Sandoz, 68 Charlton St., New York 14, N. Y.
- 31 Smith, Kline & French Laboratories, Phil-  
adelphia, Pa.
- 32 Beech-Nut Packing Co., 217 West 19th St.,  
New York 11, N. Y.
- 33 Ciba Pharmaceutical, Summit, New Jer-  
sey.
- 34 Tablerock Laboratories, Greenville, South  
Carolina.
- 35 J. B. Roerig & Co., 536 Lake Shore Drive,  
Chicago 11, Ill.
- 36, 37 Durr Surgical Supply Co., 228 Com-  
merce St., Montgomery, Ala.
- 38 George A. Breon & Co., 1450 Broadway,  
New York 18, N. Y.
- 39 Brayten Pharmaceutical, Chattanooga 9,  
Tenn.

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OTHER ITEMS

ALUMNI ASSOCIATION  
MEDICAL DEPARTMENT  
UNIVERSITY OF ALABAMA

The annual banquet of the Alumni Association, Medical Department, University of Alabama, will be held at the Battle House, Mobile, at 6:30 P. M. on Friday, April 16.

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ANNUAL MEETING  
ALABAMA PEDIATRIC SOCIETY

The Alabama Pediatric Society will have its annual meeting in Mobile at the Admiral Semmes Hotel on Wednesday, April 14, 1954, the day prior to the meeting of the State Medical Association. Registration will start at 8:30 A. M., with the welcome hour from 9 o'clock to 10 o'clock. The guest speakers will be Dr. Waldo E. Nelson, Professor of Pediatrics at Temple University, and Dr. James N. Etteldorf, Associate Professor of Pediatrics at the University of Tennessee.

PROGRAM  
OF THE  
WOMAN'S AUXILIARY  
TO THE  
MEDICAL ASSOCIATION  
OF THE  
STATE OF ALABAMA

Organized 1923

Battle House  
April 15, 16, 1954  
Mobile, Alabama

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Mrs. Julian P. Howell..... Selma

President-Elect

Mrs. John M. Chenault..... Decatur

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2nd—Mrs. J. R. Williams..... Selma  
3rd—Mrs. H. L. Rosen..... Montgomery  
4th—Mrs. Otis F. Gay..... Huntsville

Recording Secretary

Mrs. J. S. Pilkington..... Selma

Corresponding Secretary

Mrs. James H. Armstrong..... Selma

Treasurer

Mrs. E. J. Kocour..... Montgomery

Auditor

Mrs. William L. Smith..... Montgomery

Finance

Mrs. O. N. Edge..... Troy

Historian

Mrs. W. J. Rosser..... Birmingham

Parliamentarian

Mrs. J. G. Daves..... Cullman

COMMITTEE CHAIRMEN

A. Sponsored by Woman's Auxiliary, Am. Med. Assn.  
Today's Health—Mrs. J. O. Finney, Gadsden  
Nurse Recruitment—Mrs. Paul Simpson, East Gadsden  
Legislation—Mrs. Frank W. Riggs, Montgom-  
ery  
Civil Defense—Mrs. L. L. Friedman, Birm-  
ingham.  
Am. Med. Education F'dation—Mrs. W. J. Ros-  
ser, Birmingham

- Mental Health—Mrs. J. S. Tarwater, Tuscaloosa  
 Bulletin—Mrs. J. F. Holley, Florala  
 Public Relations—Mrs. W. G. Thuss, Birmingham  
 Program—Mrs. John F. Jenkins, Birmingham
- B. *Sponsored by Woman's Auxiliary, Southern Med. Ass'n*  
 Doctor's Day—Mrs. R. H. Cochrane, Tuscaloosa  
 Jane Todd Crawford—Mrs. J. R. Horn, Bessemer  
 Research and Romance of Medicine—Mrs. G. G. Woodruff, Anniston  
 Councilor to Southern Medical Auxiliary, Mrs. W. G. Thuss, Birmingham
- C. *Sponsored by Woman's Auxiliary, Med. Ass'n., State of Ala.*  
 Yearbook—Mrs. N. T. Davie, Anniston  
 Press and Publicity—Mrs. Mack J. Roberts, Mobile  
 Social—Mrs. C. M. Cleveland, Mobile  
 Members-at-Large—Mrs. E. F. Leatherwood, Hayneville  
 Revisions—Mrs. E. V. Caldwell, Huntsville  
 Archives and Exhibits—Mrs. J. M. Kimmey, Elba  
 Memorials—Mrs. C. D. Killian, Fort Payne  
 Lettie Daffin Perdue Fund—Mrs. E. L. Stran-  
 dell, Brewton  
 Newsletter—Mrs. W. T. Brannon, Montgomery  
 Nominating—Mrs. J. O. Morgan, Gadsden
- D. *For Convention*  
 Convention Chairman—Mrs. B. B. Kimbrough, Jr., Mobile  
 Press and Publicity—Mrs. A. D. Henderson, Mobile  
 Timekeeper—Mrs. J. H. Baumhauer, Mobile  
 Registration—Mrs. A. T. Brown, Mobile  
 Social—Mrs. C. M. Cleveland, Mobile  
 Tickets—Mrs. Frank England, Mobile  
 Flowers—Mrs. W. R. Meeker, Mobile  
 Hospitality—Mrs. Leonce Newman, Mobile  
 Transportation—Mrs. George Newbern, Mobile  
 Credentials—Mrs. A. M. Cowden, Mobile  
 Resolutions—Mrs. J. U. Reaves, Mobile



**Thursday, April 15th**

- 8:00 a. m.—Registration  
 8:30 a. m.—Preconvention Board Meeting  
 (Officers, Committee Chairmen and County Presidents)  
 Mrs. Julian P. Howell, President, Presiding  
*First General Session of Convention*  
 10:30 a. m.—Call to Order—Mrs. Julian P. Howell, President, Selma  
 Invocation—Rev. Cullen B. Wilson, Pastor, Government St. Methodist Church

- Greeting of Welcome—Mrs. B. B. Kimbrough, Jr., Mobile  
 Response—Mrs. H. L. Rosen, Montgomery  
 Memorial Service—Mrs. C. D. Killian, Fort Payne  
 Address—Dr. J. O. Morgan, President, Medical Ass'n., State of Alabama  
 Presentation of Distinguished Guests  
 Convention Rules of Order—Mrs. B. B. Kimbrough, Jr., Convention Chairman, Mobile  
 Initial Report of Credentials Chairman—Mrs. A. M. Cowden, Mobile  
 Report of Committee for Reading of Minutes—Recording Secretary, Mrs. J. S. Pilkington, Selma  
 Annual Reports of Officers and Committee Chairmen  
 1:00 p. m.—Dutch Luncheon—Mrs. Julian Howell, President, Presiding  
 Honoring Mrs. George Feldner, President, Woman's Auxiliary, Southern Medical Association, New Orleans, La.  
 Invocation—Mrs. J. U. Reaves  
 Presentation of Past Presidents' Pins  
 Address—Mrs. Feldner



**Friday, April 16th**

- 8:00 a. m.—Round Table Discussion—Dutch Breakfast  
*Second General Session of Convention*  
 9:30 a. m.—Call to Order—Mrs. Julian Howell, President  
 Invocation—  
 Message—Dr. Douglas L. Cannon, Secretary, Medical Association, State of Alabama  
 Message—Mr. W. A. Dozier, Public Relations Director, Med. Ass'n., State of Ala.  
 Message—Dr. Paul Jones, Report on Rural Health Conference  
 Presentation of Distinguished Guests—  
 Second Report of Credentials Chairman—Mrs. A. M. Cowden  
 Annual Report of County Presidents:  
 Baldwin—Mrs. Bruce Nelson, Bay Minette  
 Calhoun—Mrs. I. M. Boozer, Anniston  
 Coffee—Mrs. J. F. Stanley, Enterprise  
 Colbert—Mrs. D. D. Cox, Sheffield  
 Cullman—Mrs. W. J. Lovett, Cullman  
 Covington—Mrs. J. F. Holley, Florala  
 Dallas—Mrs. S. M. Kirkpatrick, Selma  
 DeKalb—Mrs. R. A. Igou, Fort Payne  
 Escambia—Mrs. T. W. Reed, Brewton  
 Etowah—Mrs. J. O. Finney, Gadsden  
 Jefferson:  
 Birmingham—Mrs. J. C. Carmichael, Birmingham  
 Bessemer—Mrs. Weldon Ray, Bessemer

Lauderdale—Mrs. John B. Rice, Florence  
 Madison—Mrs. Otis F. Gay, Huntsville  
 Marion—Mrs. Robert S. Mason, Hamilton  
 Marshall—Mrs. Walter J. Alves, Guntersville  
 Mobile—Mrs. B. B. Kimbrough, Mobile  
 Montgomery—Mrs. T. H. Williams, Montgomery  
 Morgan—Mrs. G. H. Nungester, Decatur  
 Pike—Mrs. W. P. Stewart, Troy  
 Talladega—Mrs. W. C. Friday, Talladega  
 Tuscaloosa—Mrs. W. A. Anderson, Tuscaloosa  
 Walker—Mrs. T. J. Payne, Jr., Jasper

Report of Registration Committee—

Announcements—

Business—

Report of Nominating Committee—Mrs. J. O. Morgan, Gadsden, Chairman

Election of Officers

Election of Nominating Committee

Final Report of Credentials Committee

Luncheon 1:00 p. m.

Woman's Auxiliary, Mobile County Medical Society, Hostess

Honoring Mrs. Leo J. Schaeffer, President, Woman's Auxiliary, Am. Med. Ass'n., Salina, Kansas

Mrs. B. B. Kimbrough, Jr., President, Mobile County Medical Auxiliary, Presiding

Invocation—Mrs. H. R. Cogburn

Address—Mrs. Schaeffer

Installation of Officers

Presentation of Committee Chairmen, Mrs. John Chenault

Program—Mrs. Mack J. Roberts—

Music—Mrs. Cecil H. Ross, Piano; Mrs. Jessie C. Vineyard, Violin

Readings—Mrs. Earl Joseph (all of Mobile)

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### Rules of Order

1. All persons appearing on program please be seated in reserved section in front of room.
2. Badges should be worn by members of the voting body during the regular sessions.
3. To gain recognition on the Convention floor, the member should rise, address the Chairman, give her name and name of Auxiliary.
4. Unless notified, each speaker will be limited to two minutes and may not speak more than twice on one subject.
5. A timekeeper will notify each speaker when her two minutes are up.
6. All motions should be in writing, signed and presented to the recording secretary.
7. Reports should be read only by person making a report or by her appointed delegate.
8. Visitors are welcome but please register and sit apart from voting body.

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## THE ASSOCIATION FORUM

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

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### ANNUAL REPORT OF THE RETIRING PRESIDENT OF THE MEDICAL SOCIETY OF MOBILE COUNTY

December 7, 1953

A. M. Cowden, M. D.

*Mr. Chairman and Members of the Medical Society of Mobile County:*

As retiring president of the Medical Society of Mobile County, I beg leave to submit the following report. I deeply appreciate the honor of serving as president of the Society. Following the custom of most organizations, and with a feeling of gratitude for our many blessings, we have opened the meetings with an invocation.

The work has been pleasant and profitable because of the wonderful cooperation of all the committees and individual members. We will mention a few of the accomplishments and failures during the year.

The Public Relations Committee was quite active. During the legislative session a party of about 20 doctors was organized to go to Montgomery to attend a committee hearing on the chiropractor bill, they playing a part in preventing the passage of a licensing bill for chiropractors.

Our Grievance Committee has done excellent work. You may not be fully aware of the fact that we are more or less pioneers in this field. Many sections of the country have grievance committees in name only; ours functions. It has shown ample justification for its existence and has done much to bolster our public relations. Several cases have been handled in an excellent manner and the people involved have expressed much gratitude to me in being able to talk to a committee or someone to explain and clear up their difficulties.

The Gorgas Memorial Committee has

made progress in arranging for a suitable commemoration next year for General Gorgas, a native of our city. He has already been admitted to the National Hall of Fame.

The greatest achievement probably was the establishment by our Society of a fee schedule. Every specialty group and the general practitioners cooperated in formulating a suggested fee scale to be charged average income groups. This is a very great step in showing the people that we are still willing to treat them for fees they can afford to pay; it enables the Grievance Committee to have some idea as to what is a fair charge, and it is a warning to all health insurance companies that we will negotiate only with our patients and have no intention of agreeing to any service plan that may be devised.

#### UNFINISHED BUSINESS

1. We find that the chiropractor problem is not settled. Since many legislators still favor a licensing bill for them, some plan must be worked out to protect the people from incompetent practitioners.

2. We are grateful for the fine cooperation and professional friendliness existing between our doctors and those at the local government installations, but we are all more or less aware of the practice of government doctors treating civilian personnel. This form of socialized medicine should be investigated and corrected.

3. Another condition demands our attention. Among 22,613 applicants on the waiting list for treatment in V. A. hospitals June 30, 1953, only three had service connected disabilities. We should aid in correcting the further socialization of medicine by this route.

4. This last item may sound controversial. I would not be dogmatic, but if I can only lead you to get my point of view I shall be satisfied. We are very proud and thankful for the progress we have made in preventive medicine. Many dreaded diseases have been virtually eliminated by removing their causes. But alcohol, which wrecks more homes and destroys more lives than all the wars combined, has been left to serve the grim purpose of the pale horseman. We read many articles on treating alcoholism, now considered a diseased state, which involves in this country several million people. It is a preventable disease. Not one article do I recall ever mentioning the direct cause—alcohol and its availability—but

only the end results are discussed. We may as well write about malaria and never mention the mosquito. Drs. Feldman and Zucker of New York wrote a very fine article in the Nov. 7, 1953 issue of the A. M. A. Journal. These men must be very old. They even revived the moral question and suggested that a religious advisor be called in. The medical profession has the cold scientific facts, the power, and therefore the responsibility to deal with this increasingly alarming problem effectively. But an unpopular law cannot be enforced? This we have heard for 20 years. Well, the draft law touches almost every family; it is enforced. The income tax law is unpopular also; this law is enforced as we can all attest. Since we are the guardians of the people's health, we should exercise our duty or else we may lose the opportunity. We should commend the A. M. A. for banning whiskey and cigarette ads in the Journal. We should go a step further and seek to ban all liquor ads, especially on television; or shall we stand by and let some other organization take the lead in stopping the human slaughter on the highways, and the education of our children with this blood money?

These are items of unfinished business. If we fail the people by continuing to duck our realities like an alcoholic tries to do, and fail to work out some type of regulation of drinking, we may never regain our lost prestige, nor the full confidence of the people who have always looked to our noble profession for guidance and protection.

I wish to thank very graciously Dr. Vaun Adams, Program Chairman, for the outstanding speakers he has provided; and all Committee Chairmen and others who have assisted by their cooperation and efforts.

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#### STORY RETOLD

W. A. Dozier, Jr.

Director of Public Relations

You know if you keep your ears open and your mouth shut when out in public, you can hear and learn a lot. On a recent train trip, this fact was most forcefully brought to mind.

The lounge was crowded, and the hum of voices was so great that practically no single conversation was distinct. Because of this, reading was very easy and undisturbed. However, reading on a fast moving train is

not too pleasant because of the strain on the eyes. One is likely to begin surveying his fellow passengers; and before he knows it, he is eavesdropping. Two well-dressed, intelligent looking men were talking.

"Tom really told Doc off the other night at the party. Since Tom is running for the Legislature again, Doc must have thought this was a good time to ask some questions. The first question Doc asked was answered with, 'I thought my speech last night fully covered that. If you weren't able to tune in, you got a good, accurate reporting of it in the morning paper.'"

"'Oh, hell,' said Doc, 'I never read papers—especially stories about politics or politicians and their speeches.'"

"'Well,' said Tom, 'my letter that went out to all my doctor constituents about a month ago gave you my views in very clear language. I certainly did not side-step the issue nor did I use a lot of double talk.'"

"'Do you think,' interrupted Doc, 'that I

bother to read all of that type stuff that comes through the mails?'"

"With that Tom got a bit mad, and did he blister Doc. He told him in no uncertain terms that he and the rest of his group had damn well better begin keeping up with what goes on around them. He told Doc, 'You and the rest of the doctors yell like hell when you think you are being hit; but if you had kept up earlier, you never would have been in a position to be hit now.' I mean he went on to tell him exactly what was what. 'And,' said Tom, 'this matter of not reading your mail is not only dangerous but highly insulting! You seem to think . . .'"

Just at this point the conductor announced the next station, and the two gentlemen left the train. Not only was it a pity to miss the rest of the story, but it is a shame that a recording could not have been made of the whole conversation. Reports can be made, as this one is; but they never carry the weight of the man's voice and his own words.

## STATE DEPARTMENT OF HEALTH

### BUREAU OF ADMINISTRATION

D. G. Gill, M. D.

State Health Officer

### DR. JOHN ALLAN WYETH, AN ALABAMA MAN OF MEDICINE

Contributed By

John M. Gibson, B. Litt., Director  
Division of Public Health Education

Visitors to Alabama's historic and beautiful State Capitol show much interest in the small community of the state's illustrious sons standing in marble dignity on the broad, beautiful lawn. Conspicuous among that distinguished group stands Dr. John Allan Wyeth. He is not at all out of place in such company. For he did much for humanity. He contributed mightily to the progress of medicine and he reflects great credit upon his native state.

Dr. Wyeth was a native of Missionary Station, in Marshall County. His birth date was May 26, 1845. That was just ten days after the birth, in a distant part of the world, of another baby who, like him, was destined

to contribute mightily to the mastery of mankind's great disease enemies. For Ilya Metchnikoff was born in the Russian village of Kharkoff on May 16 of that same year. As far as is known, the two men never met, although they certainly had much in common.

The parents of the future Dr. Wyeth had lived in Alabama about nine years when he was born. A native of Harrisburg, Pennsylvania, where he was born on June 20, 1812, Louis Weiss Wyeth was unusually well educated for his times. After graduation in law at the age of 21, he returned to his home community to establish his practice, but he remained there only about three years. It was then—in 1836—that he moved to Marshall County. He received many honors at the hands of his fellow Alabamians. Among them were his election as judge of the probate court and as Marshall County's representative in the State Legislature. He was also twice elected a judge of the Fifth Judicial District and undoubtedly could have served much longer if he had not declined to run again. He likewise had the unique

distinction of having declined the privilege of serving as Chief Justice of the Alabama Supreme Court. This Pennsylvania-born Yankee loved the South, just as the father of another distinguished man of medicine did. And, also like Josiah Gorgas, he offered his services to the South when the hour of decision forced him to make up his mind as to which side he would support in the War Between the States. Although too old for conscription, he volunteered and proudly wore a gray uniform. He was not able to see the war through on the battlefield, however. He received a medical discharge and returned to his Marshall County home some time before Appomattox. There in Marshall County he died in 1889, three days after his Nation's birthday. John Allan Wyeth was indeed fortunate in fate's choice of a father for him.

He was also fortunate in his mother. Her family was her first interest and her first and only love. However, her sympathy for and interest in others was also one of her strongest characteristics. Typical of her passion for helpfulness was the assistance she gave a former Confederate soldier. On that errand she received an injury which made her virtually an invalid for the rest of her life. She was unable to walk or even to stand during the 15 years immediately prior to her death.

Young John Allan Wyeth received the best education that his small North Alabama community was capable of providing. But it was meagre enough. In the year that brought the outbreak of the War Between the States, he enrolled as a cadet at the La-Grange Military Academy, situated in nearby Franklin County. His stay there was brief, however. The war caused it to close its doors, as students and faculty members alike deserted its quiet halls for the strife and bloodshed of the battlefields.

Following his father's example, this youngster entered the Confederate Army by volunteering for service in Quirk's Scouts, which were a part of the cavalry outfit commanded by General John H. Morgan. His service during the winter of 1862-63 included participation in the "Christmas raid" at Bear Wallow, near Glasgow, on the day which is supposed to commemorate peace on earth, not a struggle to the death between men on opposite sides of a battle line. The next day he participated in the engagement at Upton Station. On December 27 he did

his share of fighting at Elizabethtown. The next day he and his comrades were in the thick of the battle at Mudraugh's Hill. And then, on the 29th, the fighting took him to Rolling Fork River.

In April 1863, he joined Co. I of Russell's Fourth Alabama Cavalry Regiment. He was with it until the war dragged on to its tragic end in the spring of 1865. During the approximately two years he spent in that outfit he saw lively action at Shelbyville, Morris Ford, and Winchester (Tenn.). After declining an "unlimited leave of absence" offered him in mid-September 1863, as a reward for extraordinary bravery and courage, he stayed with his outfit through the three days of bloody fighting at Chickamauga. The day after that engagement ended, he helped defeat the Federals at McLemore's Cove. After a few days of comparative inaction, he was in the thick of the fighting incident to the crossing of the Tennessee River at Cottonport. Two days later at Anderson's Cross Roads, his regiment took a large number of prisoners. In that same action it captured and destroyed what has been described as "probably the largest supply train taken during the war," stretching some eight miles along the road. Unfortunately for him, he and his horse parted company in that action. Becoming isolated from the main force, he was captured and taken prisoner.

He spent 16 months in that humiliating status, most of the time at Camp Morton, in Indiana. He did not like that place at all and wrote about his life there in an article published years later in *The Century Magazine*. He was exchanged just a few weeks before the war's end and served until he was again captured, this time at Macon, Georgia. His second imprisonment was of brief duration. An opportunity came for him to escape, and he made the most of it.

After Appomattox this fighting Alabamian with no more war to fight became a farmer, presumably in or near his home community of Missionary Station. But apparently farming did not appeal to him. For in 1867 he became a medical student at the University of Louisville, where he was graduated in 1869. After engaging in private practice for only about two months, he received and accepted an offer to become surgeon for a railroad construction company on a job in Arkansas. But somehow, medicine did not appeal to him, either as a pri-

vate practitioner or as a contract doctor. He stayed on that job only about a year and then, as he thought, gave up the medical profession altogether. Steamboating and the construction of publicly owned structures struck his fancy temporarily, and he spent about two years in those fields. But he still was not happy.

This dissatisfied Alabamian decided to give medicine another try in 1872, and in October of that year he went to New York for additional study. In April 1873, he became a member of the faculty of the Bellevue Hospital Medical College.

Evidently he liked medicine much better this time. At any rate, he began taking giant strides up the ladder toward medical preeminence. He was named visiting surgeon at Mount Sinai Hospital and consulting surgeon at St. Elizabeth's Hospital in 1880. (Both institutions of course were in New York City.) The following year he was made senior professor of surgery at the New York Polyclinic Medical School and Hospital. Later he became president of the faculty. He served two terms as president of the New York Pathological Society and the New York Academy of Medicine and one each as president of the New York State Medical Association, and first vice president and then president of the American Medical Association. The additional honors which came to him included honorary degrees from the University of Alabama and the University of Maryland.

Dr. Wyeth added to his fame by becoming a prolific and gifted writer and orator. He won two prizes for essays sponsored by the American Medical Association. The Wyeth bibliography is an impressively long one, consisting for the most part of essays on the technical aspects of medicine but including an occasional piece addressed to the non-medical general public and written in layman's language. A son-in-law of another famous Alabamian—an adopted Alabamian, it is true, but a true Alabamian just the same—he addressed the Southern Surgical and Gynecological Association in Washington in 1895. His subject was his famous father-in-law, his title "J. Marion Sims and His Work." He talked on "Medical Education" at the 1890 meeting of the Mississippi Valley (Medical) Association. On two separate occasions he was a featured speaker at meetings of the American Medical Association. Turning to text-book authorship, he

wrote his highly successful *Text-Book on Surgery* which was published for the first time in 1886 and subsequently went through several editions. The already-mentioned non-medical, non-technical writing he did included, in addition to his *Century Magazine* dissertation on the cruelties of prison life, a historical sketch published in *Harper's Magazine*, a series of articles on General Nathan Bedford Forrest, also published in *Harper's Magazine*, and a full-length biography of the famous Confederate leader, published by Harper and Brothers.

Dr. Wyeth was long harassed by poor health, which made all the more impressive his record of achievement. Hoping to find a measure of relief, he went to Europe in 1876. He did not return for about two years. During that time he devoted himself to studying the organization plans of some of that continent's famous medical schools. And, as he did so, he dreamed of duplicating on his side of the broad Atlantic the type of postgraduate medical instruction then available to Europeans but not to Americans. A few years after his return—that is, in 1881—he saw his dream take firm form in brick and mortar. Under his leadership and inspiration, the New York Polyclinic Medical School and Hospital opened its doors. Then, for the first time, American men of medicine who needed postgraduate instruction in the latest advances in their field were able to obtain it. As already pointed out, Dr. Wyeth became a member of its faculty. Later, he was advanced to the presidency of the faculty.

This man who had a great deal of trouble making up his mind whether he wanted to become a doctor remained a prominent figure in his profession until his death. That came on May 26, 1922. With it, Dr. Morris Fishbein tells us in his history of the American Medical Association, "there passed a conspicuous figure in the development of American medicine."

Others have paid him other tributes. One who has done so was Marion J. Verdery, who wrote about Dr. Wyeth, the man, in an article published in the *Library of Southern Literature* before his death:

"His bearing is so exceedingly modest that a stranger would never suspect his distinction. His sterling manhood combines with an exquisite gentleness of nature to make him kind, considerate, and generous. His heart is true to the impulses of sympathy and tenderness, his nerve is equal to the demands of highest courage, and his mind reflects the beauty of culture and the pow-

er of truth. His uncompromising integrity and exalted sense of honor harmonize well with the exactness of his science and the nobility of his profession. His character, as a whole, bespeaks the superiority of his lineage, and his brilliant achievements testify not only to his genius but to the inestimable value of his conscientious labors for the relief of human suffering. High-minded, pure-hearted, and gentle-tempered, he commands confidence, inspires admiration, and compels love."

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director  
SPECIMENS EXAMINED

December 1953

Examinations for diphtheria bacilli and Vincent's .....	198
Agglutination tests .....	694
Typhoid cultures (blood, feces, urine and other) .....	335
Brucella cultures .....	12
Examinations for malaria .....	70
Examinations for intestinal parasites .....	3,905
Serologic tests for syphilis (blood and spinal fluid) .....	20,757
Darkfield examinations .....	3
Examinations for gonococci .....	1,168
Examinations for tubercle bacilli .....	2,961
Examinations for meningococci .....	0
Examinations for Negri bodies .....	103
Water examinations .....	1,458
Milk and dairy products examinations .....	4,658
Miscellaneous .....	2,254
Total .....	38,576

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director  
CURRENT MORBIDITY STATISTICS

1953

	Nov.	Dec.	E. E.* Dec.
Typhoid and paratyphoid fever .....	4	6	3
Undulant fever .....	1	3	3
Meningitis .....	9	12	7
Scarlet fever .....	42	68	71
Whooping cough .....	46	24	91
Diphtheria .....	27	21	42
Tetanus .....	4	2	3
Tuberculosis .....	154	185	196
Tularemia .....	0	0	1
Amebic dysentery .....	0	0	2
Malaria .....	3	0	5
Influenza .....	345	602	252
Smallpox .....	0	0	0
Measles .....	178	277	44
Poliomyelitis .....	9	9	9
Encephalitis .....	0	1	0
Chickenpox .....	67	91	153
Typhus fever .....	0	0	8
Mumps .....	26	24	47
Cancer .....	319	338	245
Pellagra .....	0	0	2
Pneumonia .....	139	235	171
Syphilis .....	139	126	746
Chancroid .....	7	16	14
Gonorrhea .....	322	340	435
Rabies—Human cases .....	0	0	0
Positive animal heads .....	25	27	0

As reported by physicians and including deaths not reported as cases.  
\*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF SANITATION

Arthur N. Beck, M. S. in S. E., Director  
THE BROWN DOG TICK, RHIPICEPHALUS  
SANGUINEUS (LATR.), IN ALABAMA

Contributed by  
Oscar V. Lopp, Sanitarian (R)  
Alabama C. D. C. Entomologist

The brown dog tick, *Rhipicephalus sanguineus* (Latreille) is one of the most widely distributed species of tick in the world. First described in 1806 from the Mediterranean region of Europe, it has spread rapidly and is now known to occur in practically all the countries of the world located between 40° N and 40° S latitude. The first mention of this tick in the United States was by Banks in 1908; by 1945 it had been found in thirty four states but at that time had not yet been described from Alabama (Bishopp and Trembley, 1945).

The dog is the principal host of this tick, as its name indicates, although it has been found occasionally on a large number of other species of animals (Cooley, 1946). Man is seldom attacked by the brown dog tick, but bites may become more frequent when infested dogs are allowed to live in close association with people inside their homes. Under such circumstances the ticks occasionally leave the dogs and take up their abode in the house, where they establish themselves in various hiding places and thus are sometimes mistaken for bedbugs. Favorite hiding places in houses are behind baseboards, beneath loosened wallpaper, in back of pictures on the wall, in the cracks between boards, and in upholstered furniture. It is possible for the brown dog tick to complete its entire life cycle from egg to adult within a house, provided a dog is present on which the larva, nymph and adult may successively feed.

The public health importance of the brown dog tick in the United States lies in the fact that it is a potential vector of Rocky Mountain Spotted Fever. It has been shown that under experimental conditions *R. sanguineus* can harbor and transmit the rickettsial organism which is the cause of this serious disease of man (Parker et al., 1933). The only disease it is actually known to transmit in this country is canine piroplasmosis, which occurs in a very restricted area and is not at all widespread. In the Old World however, it is the carrier of boutonneuse fever of man, and while this disease

does not occur in the New World, it would appear unsafe to assume that it could not be introduced.

The first specimens of *R. sanguineus* known to be described from Alabama were two nymphs taken on June 25, 1947, from a dog in Huntsville, while the author was conducting a tick survey in that city. Two weeks later five males, fourteen females and one nymph of the brown dog tick were taken inside a house in Huntsville, and on July 19 the same house, after treatment with an insecticide, yielded four female ticks of this same species. On July 30, 1947, the writer received from Mobile seven male and twelve female specimens of *R. sanguineus*, all of which had been taken inside a house. Representative samples of the ticks collected in Huntsville were forwarded to Dr. Harry D. Pratt, Scientist, U. S. Public Health Service, Communicable Disease Center, Atlanta, Georgia, who confirmed the identifications.

On August 17, 1949, the writer received from Birmingham one lot of *R. sanguineus*, consisting of four males, six females and one nymph. The source or host of these ticks was not specified. On August 11, 1953, seven more females of this same species, taken from dogs, were also received from Birmingham.

In the autumn of 1950 approximately twenty five specimens consisting of males, females, and nymphs of the brown dog tick, taken in a four-unit apartment house in Montgomery, were brought to the author for identification. Two weeks later, following treatment of the building with an insecticide, several more live specimens of the tick were taken in the same house, whereupon it was again sprayed throughout. In December 1953, five males, three females and one nymph of *R. sanguineus* were taken from another house in a different section of Montgomery and forwarded to the writer for identification.

On September 4, 1953, five male and three female brown dog ticks were taken from a house in Ozark. Several days later another lot consisting of five males, six females and one nymph of the same tick species were collected from the same house in Ozark, whereupon the house was treated with an insecticide.

The distribution of the brown dog tick records in Alabama, ranging from Mobile

in the south to Huntsville in the north, indicates that this tick is probably present in all parts of the state, and may actually be much more common in occurrence than our present records indicate. Knowing that the dog is the common host, and recognizing the frequency of present day travel involving dogs, it is logical to assume that there will be a rapid increase in the magnitude of the problems associated with the brown dog tick in this state. In addition to the nuisance factors related to the presence of this ectoparasite within a dwelling, it is quite possible that the existence of a significant public health problem involving human disease transmission may eventually be demonstrated.

In all instances where the brown dog tick was found living in houses in the various cities distributed over the state, the fact was established that one or more tick-infested dogs had frequent access to the interior of the building. Therefore, to prevent tick infestation of a building, it is obvious that tick infested dogs must be excluded. Since practically all dogs will at times pick up a certain number of ticks, depending upon the tick population of the area in which they live, dogs should be inspected frequently, and kept free of ticks by dipping or dusting them with an appropriate insecticide such as derris or DDT. Derris is effective against the ticks, harmless to the dog, relatively inexpensive, and may be used either as a dip or as a dust (Smith et al., 1946). The standard derris dip or wash is made up as follows:

- 2 ounces derris powder (4% rotenone)
- 1 ounce neutral soap
- 1 gallon water

Ticks on dogs may also be controlled with DDT applied as a ten per cent dust. An ample amount of the dust should be used to permit rubbing thoroughly throughout the hair and over the skin of the dog, in order to cover any attached ticks. Since the ticks do not migrate after attachment, the DDT must be rubbed into them to be effective.

Eradication of ticks from houses, although difficult to accomplish, may be obtained by thorough application of a five per cent DDT spray, particular attention being paid to hiding places such as those previously mentioned. The standard spray application of one gallon of five per cent DDT solution or emulsion per one thousand square feet of

surface treated may be followed. However, it must be remembered that ticks are not true insects, and DDT preparations have not been found to be highly effective in their control. Therefore, a second treatment of suspected tick hiding places may be required, and possibly another chemical may have to be applied by an experienced pest control operator to obtain eradication. The ticks are also highly resistant to fumigation, even when cyanide gas is used.

From the evidence at hand, the fact is obvious that it is much easier to prevent tick infestations than it is to eradicate them after they have become established. It is also evident that, since the brown dog tick is difficult to control, it will probably become a more widespread and important pest in Alabama, and possibly be recognized as a disease vector of significant public health importance.

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**Nausea and Vomiting in Pregnancy**—Perhaps the most common complaint of pregnancy which is found in the largest number of women is that of nausea and vomiting. This is thought to occur to some degree in at least 50 per cent of all women who are pregnant. These patients have either some nausea or some vomiting or both. Our method of treatment for this disorder, which we find highly successful, is the use of a high carbohydrate diet in which the patient omits the three meals a day and eats small frequent feedings usually every hour or two and oftentimes eats before arising in the morning. If the patient vomits after eating, she should eat again. This routine should be accompanied by a maximum amount of rest and quiet. These patients are also often put on barbiturates and bromides as a mild sedative. If no results are obtained from this routine, the next step is to try the amphetamine sulfate derivatives. We have had relatively good results from these drugs. If there is still no improvement in the patient, she is then given 100 mg. of vitamin B<sub>1</sub>, intramuscularly, and 100 mg. of vitamin B<sub>6</sub>, intravenously.—*Miller and Sewell, J. Louisiana State M. Soc., Jan. '54.*

## BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

### PROVISIONAL BIRTH AND DEATH STATISTICS FOR OCTOBER 1953

Live Births Stillbirths and Deaths by Cause	Number Registered During October 1953			Rates* (Annual Basis)		
	Total	White	Colored	1953	1952	1951
Live births	6897	4460	2437	25.6	27.0	27.9
Stillbirths	172	84	89	24.3	26.8	27.5
Deaths, stillbirths excluded	1946	1132	814	7.2	8.1	7.9
Infant deaths						
under one year	192	92	100	27.8	36.4	33.1
under one month	136	70	66	19.7	25.5	21.9
Cause of Death						
Tuberculosis, 001-019	38	15	23	14.1	15.0	24.7
Syphilis, 020-029	13	4	9	4.8	3.8	4.2
Typhoid and paratyphoid, 040, 041					0.4	
Dysentery, 045-048	3		3	1.1	0.4	
Diphtheria, 055					1.5	1.1
Whooping cough, 056						1.9
Meningococcal infections, 057	1	1		0.4	1.1	0.4
Poliomyelitis, 080, 081					0.8	0.8
Encephalitis, 082, 083	1	1		0.4		0.4
Measles, 085						0.8
Malaria, 110-117	1		1	0.4		
Malignant neoplasms, 140-205	237	157	80	88.0	95.6	73.6
Diabetes mellitus, 260	18	9	9	6.7	10.5	8.3
Pellagra, 281	2	2		0.7	0.4	0.8
Vascular lesions of central nervous system, 330-334	247	143	104	91.7	97.1	97.5
Other diseases of nervous system and organs of special sense, 340-398	19	9	10	7.1	9.0	10.9
Rheumatic fever, 400-402	1		1	0.4	1.1	0.8
Diseases of the heart, 410-434	465	309	156	172.7		
Hypertension with heart disease, 440-443	137	62	75	50.9	240.5	240.9
Diseases of the arteries, 450-456	34	20	14	12.6	10.5	8.3
Other diseases of circulatory system, 444-447, 460-468	32	14	18	11.9	14.7	13.3
Influenza, 480-483	6	3	3	2.2	2.3	3.4
Pneumonia, 490-493	49	31	18	18.2	25.6	23.5
Bronchitis, 500-502	2	2		0.7	2.6	1.1
Appendicitis, 550-553	5	3	2	1.9	2.6	1.5
Intestinal obstruction and hernia, 560, 561, 570	16	9	7	5.9	5.6	6.1
Gastro-enteritis and colitis (under 2), 571.0, 764	12	5	7	4.5	18.4	6.8
Cirrhosis of liver, 581	14	11	3	5.2	0.8	3.8
Diseases of pregnancy and childbirth, 640-689	9	4	5	12.7	16.3	19.8
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 682, 684	1		1	1.4	2.7	5.4
Congenital malformations, 750-759	37	23	14	5.4	4.6	4.2
Accidental deaths, total 800-962	140	93	47	52.0	52.3	50.5
Motor vehicle accidents, 810-835, 960	72	49	23	26.7	29.0	29.6
All other defined causes	324	169	155	120.3	138.1	148.7
Ill-defined and unknown causes, 780-793, 795	83	33	50	30.8	42.5	36.4

Rates: birth and death rates per 1,000 population; infant deaths per 1,000 live births; stillbirths per 1,000 deliveries; maternal deaths per 10,000 deliveries; deaths from specified causes per 100,000 population.

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## AMERICAN MEDICAL ASSOCIATION NEWS

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### WARN OF COMPLICATIONS FROM USE OF EFOCAINE

Efocaine, a widely-acclaimed local anesthetic, may produce serious nerve and muscle tissue complications, according to four reports in publications of the American Medical Association.

One article, appearing in the *Journal of the American Medical Association*, stated that animal studies showed the "recently introduced and apparently prematurely acclaimed preparation known as Efocaine" caused "destruction of both muscle and nerve tissues." This article was prepared by Drs. Walter Mannheimer, Philip Pizzolato and John Adriani, New Orleans. They are associated with the Veterans Administration Hospital and the department of surgery, school of medicine, Louisiana State University.

Three of the articles appeared in the *A. M. A. Archives of Surgery*. One, describing the effect of the drug on animals, stated that "a severe destructive effect of Efocaine on rabbit tissues was demonstrated with doses equivalent to doses in man." The major noxious substance in Efocaine is propylene glycol, which comprises 78 per cent of the solvent vehicle for the anesthetic, it added.

The second article described human complications from the drug, which has been advocated for inducing intercostal blocks to control pain and prevent pulmonary complications in patients having chest and upper abdominal surgery.

"Although subjective relief of pain was noted with the use of Efocaine, a significant decrease in postoperative complications and in requirements for narcotics was not observed," this article pointed out. "Complications, namely neuritis, inflammatory reactions and lasting absence of nerve function, resulted from the clinical use of this drug.

"Efocaine does not fulfill the requirement for a local anesthetic agent producing anesthesia of long duration without toxic effect."

The third article in the *Archives of Surgery* reported on eight cases of spinal cord

involvement associated with the use of Efocaine, including complete paralysis and destruction of the spinal cord from the level of the injection downward. Injection of the drug, according to the authors of the article, was made close to but outside of the spinal cord. The fluid, however, apparently traveled up the nerves into the spinal cord.

Two of the *Archives of Surgery* articles were written by Drs. George Margolis, Helen E. Hall and William K. Nowill. The third was prepared by Drs. Nowill, Hall and C. Ronald Stephen. All are associated with the department of pathology and the division of anesthesiology, Duke University School of Medicine and Hospital, Durham, N. C.

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### A. M. A. PRESIDENT URGES INTEREST IN PROBLEMS OF OTHER FELLOW

An interest in the problems of the other fellow for a better understanding among business, industry and the professions was urged by Dr. Edward J. McCormick, Toledo, president of the American Medical Association.

"One of the chief afflictions among professional and business men in our complex society today is lack of interest in what the other fellow is doing," Dr. McCormick wrote in the February 27 *Journal of the American Medical Association*. "As our technological progress grows, it becomes increasingly difficult to keep a broad perspective of what is going on, and the tendency to specialization grows stronger.

"The day of the plant superintendent who was able to boast that he could perform every one of the jobs in his shop with equal skill is rapidly vanishing. The business executive who could describe every intricate detail of his enterprise is becoming rare. And the family doctor once thought suitably equipped to handle almost any kind of ailment finds increasing need for consultation with specialists.

"With each passing year there is an ever-higher rate of skilled personnel crawling into hard shells of specialization that prevent over-all contact with their industrial and professional neighbors. Worse yet,

these persons become divorced from all community activity. Yet the need is great for a better understanding among business, industry and the professions. In turn these segments of our economy owe much to the communities in which they prosper, and persons owe to each other the obligation to be good neighbors."

Dr. McCormick stressed that if the medical profession is to continue serving the public effectively, it must seek out the facts on what the public wants. Getting together with representatives outside the medical profession is one way of doing this, he stated, adding:

"It is my sincere belief that local medical societies should encourage each individual member to participate in some civic undertaking. We physicians should be rendering health leadership in all service clubs, chambers of commerce, fraternal and veterans organizations, PTA groups, church associations, and unions.

"We cannot expect these organizations to be interested in our problems if we are not interested in theirs. Doctors should rub elbows on a social and organizational basis with persons outside the profession. There is much good to be gained in taking the time to learn the trouble of the other fellow. A diet limited to one-track ideas can lead only to social anemia."

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#### **YOUR EYES ARE TOO PRECIOUS TO TAKE CHANCES WITH DYES**

Don't "eye" eyelash dyes.

When such vital and irreplaceable structures as the eyes are involved, a person should not take chances by using eye preparations which may contain ingredients of unproved safety and purity, in the opinion of Mrs. Veronica L. Conley, Chicago, assistant secretary of the American Medical Association's Committee on Cosmetics.

"The best way to be certain you avoid harmful dyes in eyelash preparations is to avoid preparations that are obviously dyes rather than the usual mascaras," Mrs. Conley wrote in the current *Today's Health* magazine, published by the A. M. A.

"Even if a product is not called a dye, you can identify it as such quite readily. The first indication will be in its advertising claims. It will be claimed to produce 'permanent' color. This is a relative term meaning that the color will be unaffected by water, tears or abrasion for several months

as compared with a mascara, which must be reapplied at least daily.

"There are usually directions for application, and sometimes gadgets are included to protect the eyes during dyeing. Mascaras usually consist of a cake or cream accompanied by a brush for application; directions usually suggest a simple method of application."

It is difficult to visualize how a chemical can be applied to the eyelashes without coming in contact with the eyes themselves, regardless of precautions, according to Mrs. Conley, who added:

"One should assume nothing when such vital and irreplaceable structures as the eyes are involved. In any discussion of eye cosmetics, the safety of the eyes overshadows all other considerations. For this reason, the use of eyelash dyes is strongly discouraged."

Mrs. Conley pointed out that even though the federal Food, Drug and Cosmetic Act prohibits the interstate sale of dangerous cosmetics, a considerable amount of time may pass before a cosmetic is found to be injurious to health and is removed from commerce.

In addition to eyelash dyes that may contain harmful ingredients, Mrs. Conley stressed that women should use common sense to guard against the uncurbed imaginative so-called beauty tips for the eyes given by professional models, film stars, actresses and beauty writers.

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#### **FIND NEW DRUG AIDS IN COMBATING SHOCK**

L-arterenol, a relatively new, synthetic drug, has been found to be of value in combating shock, it was reported in the current *Archives of Surgery*, published by the American Medical Association.

Use of the drug in conjunction with whole blood, blood plasma and fluids helps to raise blood pressure and makes it possible for some patients in profound shock to undergo extensive, and at times life-saving, surgical procedures, according to Drs. R. E. Fremont, N. M. Luger, S. N. Surks and A. Kleinman, Brooklyn.

They based their conclusions on a study of 22 patients treated with l-arterenol. The group consisted of six cases of shock associated with an acute surgical abdominal condition, 12 cases of shock occurring during or after major operations and associated in

three instances with considerable blood loss, and four cases of severe hemorrhagic shock. The drug brought the patients out of shock when added to fluid replacement therapy which in itself had been ineffective.

Intravenous injections of the drug resulted in an immediate, striking improvement in the majority of cases, the doctors stated. L-arterenol is superior in its potency and controllability to some of the other similar drugs, they added. The only adverse reaction noted was a sloughing of skin.

The doctors stressed, however, that l-arterenol must not be expected to abolish advanced hemorrhagic shock if the course of bleeding cannot be detected and eradicated. It is essential, they stated, that the cause of the shock state be known and definitive therapy undertaken as quickly as feasible; lost blood must be replaced and continued bleeding stopped.

**REPORT GALLBLADDER DISEASE PREVALENT AMONG YOUNG PERSONS**

The maxim, "fair, fat and 40," is not a proper one to describe the typical victim of gallbladder disease, in the opinion of Drs.

George D. J. Griffin and Lucian A. Smith, Rochester, Minn.

Although the majority of persons suffering from gallbladder disease are women over 40 years of age, a study by the doctors has shown that many persons so afflicted are under the age of 30. Writing in the February 27 Journal of the American Medical Association, the doctors reported on a study of 245 persons with gallbladder disease seen at the Mayo Clinic during 1948 and 1949.

Eight of these patients (3.3 per cent) were 20 years of age or less, seven (2.9 per cent) were 21 to 25 years of age, and 20 (8.2 per cent) were 26 to 30 years of age, they stated, adding:

"Thus, 6.2 per cent were 25 years of age or less, and 14.4 per cent were 30 years of age or less. In this latter combined group, the mean age was 24 years. The mean age of these patients at the onset of symptoms of cholecystic disease was 18 years. Thus, disease of the gallbladder begins at an age that is even less than our figures would imply."

Dr. Griffin is a fellow in surgery at the Mayo Foundation, and Dr. Smith is associated with the division of medicine, Mayo Clinic and Mayo Foundation.

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## OPTIMISM IN PULMONARY CANCER

RICHARD H. OVERHOLT, M. D.

Boston, Massachusetts

A challenge has been thrown in more than one direction in regard to cancer of the lung. The possible link between smoking and the rising tide of this type of cancer has put the tobacco companies on the defensive. The industry has felt required to finance a research committee to disprove the existence of a carcinogen or find ways to eliminate it from cigarettes.

Doctors have been thrown a challenge. The widespread use of x-ray screening has focused attention upon the early detection of silent lung disease. The discovery of an abnormal area of density in the lung field alerts the individual. The physician and the patient are brought into contact, and responsibility is immediately shifted. The cancer potential of every silent shadow must be estimated and promptly so. The challenge of the survey film will be remembered by both patients and relatives. Months or years later, when time has permitted progression to an unresectable lesion, almost inevitably the question is asked, "But why were we not advised that it might be so serious when the shadow was first found?"

The challenge to our profession is all the more pressing because of the alarming increase in frequency of primary cancer of

the lung. Graham<sup>1</sup> has calculated the increase in the past 25 years to be 1500%. Almost every living adult knows of some friend or person in the public eye who has recently succumbed to pulmonary cancer. The press and radio will not let the public forget this growing health problem. There is no hesitancy in reporting the finding of lung cancer in V. I. P.'s, whether they are kings, senators or otherwise. When indi-

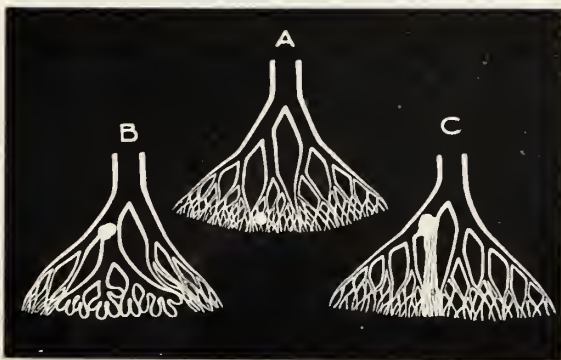


Fig. 1

Diagrams illustrating the effect that the position of the tumor in the bronchial system has on the character of the x-ray shadow.

A. In peripheral locations, tumors cause no immediate secondary effects because bronchi of size are not involved. The density of small tumors will cast a direct shadow.

B. In central locations, a tumor may produce a check-valve mechanism with segmental emphysema. The density of that segment decreases and bronchial markings are spread. In adjoining segments, bronchial markings show crowding.

C. Complete occlusion of a segmental bronchus produces atelectasis, and the density of an entire segment is altered, thus giving magnification to the area which will cast a shadow.

From The Overholt Thoracic Clinic and the New England Deaconess Hospital, Boston, Massachusetts.

Read before the 1954 Cancer Seminar held in Birmingham, January 27 and 28, under the sponsorship of the Alabama Division of the American Cancer Society, the State Medical Association, the Jefferson County Medical Society, and the Seventh District Dental Society of the Alabama Dental Association.

1. Graham, E. A.: Cancer of the Lung. Discussion, Ann. Surg. 138: 499 (October) 1953.

viduals are stricken with cancer of other sites, particularly gastro-intestinal or genito-urinary, there is no such frank reporting. While the public is asking the tobacco companies what they are going to do about prevention, victims look to us for higher cure rates. With present weapons, can more lives be saved? It is my purpose to look back and suggest why salvage rates have been so low and then to look ahead and see why there is a real cause for optimism. In fact, of all internal cancers, primary pulmonary malignancy should be the easiest to detect early and, therefore, should be the most curable.

Doctors have the weapons at their disposal. If they will support all survey programs and see that their adult male patients are x-rayed once a year, they will have the opportunity to discover early lung cancer. On discovery, the individual should have the benefit of any doubt and be surgically explored.



Fig. 2

A. Shadow of small peripheral cancer discovered by survey. This evidence was sufficient to advise immediate exploration.

#### BASIS FOR PESSIMISM

The five-year survival rate in proven cases has been low in reported series regardless of the form of treatment. Pulmonary resection has been available for over 20 years, yet the over-all salvage rate has been less than 10%. (See Tables 1, 2 and 3.) Gibbon<sup>2</sup> and various discussants have recently referred to the low salvage. Super-voltage x-ray, radium and chemotherapy have not raised this score.

Distances are short from the primary site to inaccessible areas. A cancer originating near the pulmonary hilum is located about as near the anatomic and functional center of the body as possible. The first lymphatic break may carry the tumor out of bounds surgically. Cases have been observed in



Fig. 2

B. Surgical specimen cut to show small, localized cancer. Cytology and bronchoscopy were negative. This patient is living and well today because he submitted for a survey film and then sought and accepted sound advice.

2. Gibbon, John H., et al.: Cancer of the Lung. Ann. Surg. 138: 489-495 (October) 1953.

TABLE 1

PRIMARY NEOPLASMS OF THE LUNG 1933-SEPTEMBER 1, 1953	
Total .....	1256
Adenoma .....	51
Primary carcinoma .....	1205
Surgery contraindicated ..	576 (48%)
Thoracotomy .....	629 (52%)

TABLE 2

BRONCHIAL ADENOMA 1933-SEPTEMBER 1, 1953	
Total .....	51
Living .....	47
Dead .....	4
Operative .....	2
Late metastatic .....	1
Ca - bladder .....	1

TABLE 3

SURVIVALS PRIMARY CARCINOMA OF THE LUNG— ADENOMA EXCLUDED	
Total studied 1932-1948 .....	499
Lived 5+ years .....	39 ( 8% )
Total studied 1932-1950 .....	688
Lived 3+ years .....	84 (12% )

which obstruction of the superior vena cava has occurred suddenly. Within a matter of a few days after the first clue to ill health, the neck and face may become swollen and the superficial veins of the thorax become engorged. Also, if the tumor invades blood vessels, there is but a short distance to the left auricle, and tumor tissue has immediate access to the general circulation. The apparent rapid decline from the first symptom to death in many cases, giving little time for effective action, has fostered pessimism.



Fig. 3

A. Mr. T. C. March 4, 1947. Asymptomatic. Preemployment film. The abnormal shadow is caused by segmental atelectasis. Patient refused exploration because of conflicting advice he received.



Fig. 3

B. Mr. T. C. September 12, 1949. Same patient as Figure 3A, 2½ years later when an irritating cough first appeared. The lesion is still segmental in distribution. The survey film could have set ahead considerably the time schedule of treatment if the clue had been heeded.

The first symptom in an overwhelming majority of cases of cancer of the lung is too undramatic to be a good alarm. The first warning is nothing more than a chronic cough. Many persons fail to consider cough as a symptom—only a normal reflex. In fact, the frequency of cough in cigarette smokers may act as a reverse alarm. The temporary disappearance of an irritating cough upon abstinence from cigarettes may mislead the patient and delay investigation.

Discouragement has been further enhanced because occasionally a metastatic process will be the first to produce a symptom. A lesion in the brain, bone, liver or skin may produce the first indication of trouble. When the primary lesion remains silent, secondary symptoms can never substitute as a warning.

In many early cases it is impossible to verify the diagnosis by substantiating tests, such as bronchoscopic biopsy or cytologic examination of bronchial secretions. Hood et al.<sup>3</sup> found a high percentage of negative tests in coin lesions. There was bronchoscopic evidence of abnormality in but 7% of the cases. Secretions were positive for tumor cells in but half of the cases that were subsequently found to have cancer. Gibbon<sup>2</sup> and others have warned that the earlier the lesion is discovered by x-ray the more difficult it is to obtain histologic verification by non-surgical means. This then implies a need to submit many individuals to intrathoracic exploration with the risk of their losing a part or a whole lung in order to settle the diagnosis.

#### COMMENT

It would appear on the surface that there can be little hope for raising the cure rate against such clinical odds. However, available statistics on past performance are based overwhelmingly upon results with patients who sought help because of symptoms. In our experience, the average delay from the first symptom to surgery has been about 8 months. Most surgeons explore less than half the cases they see and excise the tumor-bearing lung in approximately half of those they explore. This was clearly brought out recently in the discussion of Gibbon's paper<sup>2</sup> before the last meeting of the American Surgical Association. The



Fig. 4

Mr. F. L. Six years after left pneumonectomy for primary cancer. Note absence of deformity and evidence of a good state of health.



3. Hood, R. T., et al.: Solitary Circumscribed Lesions of the Lung, J. A. M. A. 152: 1185-1191 (July 25) 1953.

principal cause for delay in symptomatic individuals has, in the past, been related to periods of trial therapy directed to control a superimposed infection, for observation under an erroneous diagnosis of tuberculosis, or to permit time intervals in which to collect serial x-rays and waiting for a change in the character or extent of an abnormal radiologic shadow. Therefore, if surgical exploration is carried out immediately after the discovery film in the silent phase, all confusion over symptoms, signs and variation in radiologic densities will be automatically eliminated. The time schedule should be set ahead by several months or years.

#### BASIS FOR OPTIMISM

A small tumor, early in its development, will usually give a clue to its presence in the survey film. Ninety per cent of the lung field is unobstructed to radiologic scrutiny. A 3-4 mm. lesion will, itself, cast a direct shadow. (See Figures 1 and 2.) If the site of origin is in a segmental or subsegmental bronchus, a minute lesion will soon partially or completely obstruct the bronchus and cause segmental emphysema or atelectasis. The secondary alteration in density of the segment will then give a magnified abnormal shadow out in the peripheral lung field that will serve as a clue. Then, regardless of whether the shadow of the tumor is lost in hilar shadows or not, some tell-tale evidence of abnormality will be recorded in the survey film. (See Figure 3.)

Lung cancer may be slow growing in the beginning and pass through a long, silent period. X-rays taken over a period of many months or years have shown abnormal densities with little or no evidence of change. There are many reports which bear witness to records of silent cancers which have apparently remained dormant for long periods of time. Recently, Blades<sup>4</sup> has emphasized this favorable clinical fact.

A total biopsy of a lesion producing an unexplained abnormal density in an asymptomatic individual can be obtained safely, quickly and with relative ease. A limited incision for inspection, palpation and then inflation and deflation of pulmonary segments can be readily accomplished. (See Figures 4 and 5.) The lesion can be removed

completely by either wedge, segmental or lobar resection. The pathologists may then, on frozen section, positively identify it. The majority of silent cancers which have been excised soon after the discovery film are localized to their original site. Theoretically, all localized cases should be candidates for cure. In our experience, 75 per cent of



Fig. 5

A. Mr. G. G. Survey film showing shadow of coin lesion. Immediate exploration was advised and accepted. A chronic granuloma was found. It was totally removed by segmental resection.



Fig. 5

B. Mr. G. G. Film one month post-segmental resection for benign lesion. Note absence of radiologic deformity.

4. Blades, B. B.: Surgical Management of Tumors of the Lung Discovered in X-Ray Surveys, J. A. M. A. 154: 196-198 (January 16) 1954.

the patients explored promptly for a silent cancer have shown no lymphatic spread. Six of 8 such cases treated prior to 1950 are still living, without evidence of metastasis. The cure rate should exceed the percentage of strictly localized lesions since a radical mediastinal lymph-node dissection will save some whose cancer is not strictly localized. The author and Schmidt<sup>5</sup> found a 20% 5-year salvage in cases treated when lymphatic extension was known to have existed.

COMMENT

It is important for doctors to remember that cancer of the lung has a silent phase. A clue to its presence will be found by fluoroscopy or x-ray. Doctors should support all survey programs and arrange for annual x-rays of the chest of their own adult pa-

tient population. For adult males who smoke, it would be well to advise semi-annual x-rays.

An unexplained area of abnormal density

TABLE 4

SURVIVALS—5+ YEARS PRIMARY CARCINOMA OF THE LUNG— ADENOMA EXCLUDED	
Total studied 1932-1948	499
Explored	397
Resected	163
Localized	53
Not localized	110
Lived 5+ years	39 (24%)

TABLE 5

LESIONS DISCOVERED BY SURVEY 1938-JULY 1, 1953	
Total studied	745*
Resected	354
Tuberculosis	172
Tumors	102
Malignant	61
Benign	41
Cysts	35
Others	46

\*Represents 7.1% of all patients seen.

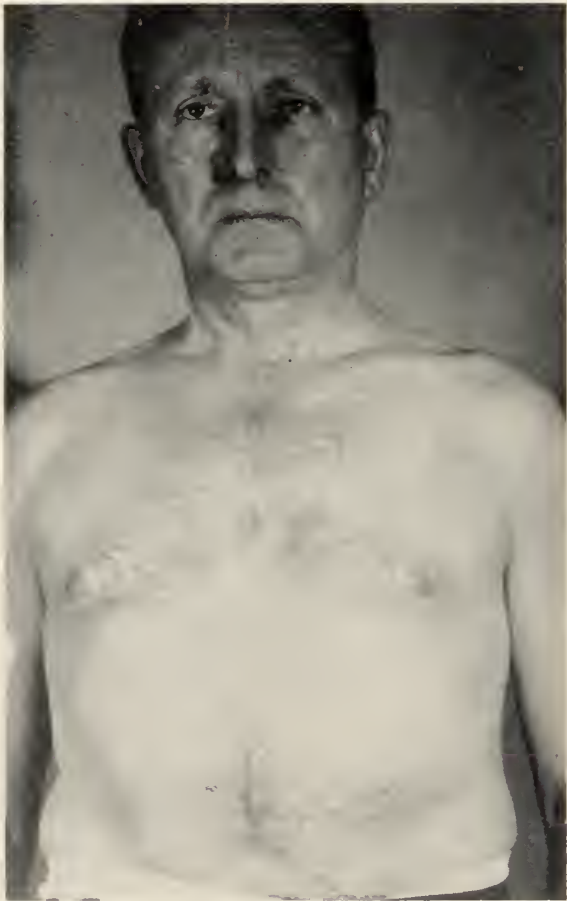


Fig. 5

C. Photograph of Mr. G. G. one month after exploratory thoracotomy for a benign lesion. Note absence of deformity and state of well being. Total hospitalization 8 days and total disability 4 weeks.

5. Overholt, R. H., and Schmidt, I. C.: Survival in Primary Carcinoma of the Lung, New England J. Med. 240: 491-497 (March 31) 1949.



Fig. 5

within the lung field may be the only clinical evidence of an early cancer. A negative bronchoscopy or the inability to find tumor cells in sputum or bronchial secretions does not rule out the possible existence of cancer. Immediate surgical exploration and total biopsy is the quickest, surest and safest way to establish the diagnosis and provide curative treatment. Cancer of the lung is the most detectable of any internal cancer dur-

ing its silent and early stages. Salvage rates should be high if there is a direct approach to the substance that produces the shadow.

TABLE 6

SURVIVALS—SURVEY LESIONS EXCISION PRIOR TO 1950			
	Patients	Living	Dead
Prompt treatment	8	6	2
Delayed treatment	22	5	17

## RADIOLOGIC EXAMINATION AND CANCER OF THE GASTROINTESTINAL TRACT

ROSS GOLDEN, M. D.  
New York City

All doctors who see patients with abdominal symptoms are confronted with the problem of tumors of the gastrointestinal tract. With this problem in mind, I have been requested to discuss briefly the part played by x-ray methods of examination in the detection of these tumors. As much as possible in the available time, I will present the possibilities and limitations of this method—facts of interest, I believe, to every doctor who sees patients with abdominal symptoms.

A discussion of the important question of technic of the x-ray examination does not seem appropriate here. Suffice it to say that the results of x-ray examination of the gastrointestinal tract depend primarily upon the knowledge and experience of the radiologist and the care with which he conducts the examination.

No matter in what part of the gastrointestinal tract the tumor is situated the radiologist must deal with two aspects of the problem. The first is to demonstrate an abnormality in the barium shadow of the viscus under examination. The second is to decide whether this abnormality is the result of a malignant new growth or of some non-malignant disease.

The first phase of the problem, the detection of an abnormality, in turn is affected by two conditions: (1) the location of the disease in the stomach, small intestine or colon, and (2) the physical character of the

tumor. New growths are much harder to demonstrate in some locations than in others. The type of tumor which forms a mass projecting into the lumen of the viscus is easier to detect than the type which infiltrates the wall without producing a mass. These points are best illustrated and are of outstanding importance in the stomach.

### STOMACH

Cancers of the stomach occur much more frequently in the lower than in the upper portions. In 315 proved cancers seen at the Presbyterian Hospital, 75 per cent were so situated that they must have developed in the antrum, 20 per cent in the media, and 5 per cent in the fundus. This means that the vast majority of cancers occur in the lower two-thirds of the stomach where abnormalities are easier to detect than they are at the top of the stomach. A growth which could be easily found in the antrum may be impossible to see at the fundus, for physical reasons which we do not have time to discuss.

The only helpful classification of carcinoma of the stomach is that of Dr. Arthur Purdy Stout, who was for many years director of surgical pathology at the Presbyterian Hospital. He found that the microscopic character of the cells of these growths was of little or no significance. The cells were sometimes different in different parts of the growth. On the other hand, he found that different tumors involved the stomach wall in different ways, and calls this the "gross growth characteristics" of the tumor. In my opinion this is the most important concept of cancer of the stomach yet produced. Dr. Stout divides these growths into four groups:

1. Fungating,

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Read before the 1954 Cancer Seminar, Birmingham, January 27-28.

2. Penetrating,
3. Spreading:
  - a. Superficial type,
  - b. Linitis Plastica type,
4. Advanced, unclassifiable.

*Fungating* growths were present in 26 per cent of 342 cases seen in the Department of Surgical Pathology at the Presbyterian Hospital between 1937 and 1949. This type forms a mass projecting into the lumen. It may reach a large size before it penetrates into the submucosa, and it metastasizes late. It may or may not ulcerate. Because of its mass the fungating growth is relatively easy to detect.

The *Penetrating* type apparently extends through all layers of the stomach wall to the serosa early in its development. It destroys and replaces the muscle. It invariably ulcerates. This type was found in 32 per cent of the 342 cases. Because of the ulceration, the lesion is easy to detect but it may be difficult to differentiate the excavation in the penetrating carcinoma from some of the benign peptic ulcers. This aspect of the problem cannot be discussed here.

The *Superficial Spreading* type extends along the wall in the mucosa and submucosa and in some cases is limited to the mucous membrane. It may produce tiny nodular elevations on the surface. It may ulcerate. This is the type of carcinoma found in the mucous membrane adjacent to the margin of some gastric craters that have the structural characteristics of benign peptic ulcers. The new growth may completely encircle the crater but usually involves only a portion of its circumference. The carcinoma adjacent to the benign crater may itself ulcerate producing a double or a lobulated crater shadow. In its later stages the malignant cells pass to the serosa through the muscularis without destroying or replacing the muscle cells. In one instance the mucosa of the entire stomach was replaced by carcinoma, with malignant cells lying among the muscle bundles of the hypertrophied muscularis; this stomach expelled barium rapidly but the contractions were unlike flexible peristaltic waves. In other instances a slight stiffening or flattening of the wall was present at the site of involvement of a relatively small area with no extension into the muscularis itself. The reason for this phenomenon is not clear.

Superficial spreading carcinoma comprised 11 per cent of the 342 cases, of which

approximately four-fifths were associated with ulceration, either with a peptic ulcer or with an excavation in the cancer itself. The lesion is more easily detected if an excavation in the carcinoma is present. Follow-up observations on some of the early cases indicate that the prognosis is better in this type of cancer than the average of all cancers of the stomach.

The *Linitis Plastica* type of spreading carcinoma extends along the wall in the submucosa, the muscle coat, and the subserosa. It does not destroy the mucosa until very late in the disease. It is often associated with high stiff mucosal folds, closely resembling those associated with gastritis—in some cases both on roentgen-ray and gastroscopic examination. In most cases the malignant cells stimulate the growth of fibrous tissue, which may vary from very slight to extreme. The linitis plastica type of carcinoma was found in 6 per cent of the 342 cases. It metastasizes early through the lymphatics and its prognosis is the worst of these different types.

Stout concludes his classification with the group of carcinomas that are too far advanced to be classified with certainty under these headings. This group comprised 25 per cent of 342 cases.

It is quite obvious that the problem of detection of the carcinoma by roentgen-ray methods is different in these groups.

Certain other conditions may simulate physically the effect of cancer on the wall of the stomach from the standpoint of x-ray shadows. The problem of differential diagnosis produced by these conditions may be listed in four categories which cannot be discussed in detail here.

(1) Neoplastic diseases such as lymphosarcoma, Hodgkin's disease, and others even more rare. If both the stomach and the duodenum or the small intestine show evidence of neoplastic disease simultaneously, the possibility of lymphoma may be suspected. In most instances, however, the appearance of this disease in the stomach is similar to that of carcinoma.

(2) Benign tumors such as polyps, leiomyoma, and fibroma are usually distinguishable by virtue of the flexibility of the wall of the stomach over the mass. Leiomyoma is usually recognizable because it produces a rounded, sharply defined defect in the barium shadow, often with a small

defect in the margin resulting from ulceration either deep or superficial in the mass. However, a fungating cancer can produce a similar appearance.

(3) Inflammatory conditions.

(a) Rare conditions such as tuberculosis, syphilis, sarcoid, and others may produce changes indistinguishable from cancer.

(b) Gastritis (so-called) is a common condition which may produce localized enlargement of the mucosal folds, sometimes called "giant folds," usually along the greater curvature of the media and fundus which may be difficult to differentiate from neoplastic masses. Gastritis may be associated with hypertrophy of the pyloric and prepyloric muscle, and antral spasm simulating the appearance of an annular carcinoma. This condition presents a very difficult problem.

(4) Ulcerating lesions. This problem has two aspects:

(a) The differentiation of so-called benign peptic ulcer from ulcerating carcinoma. The benign ulcer usually occurs on or near the lesser curvature but in very rare instances may be on the greater curvature, usually extends through the stomach wall with a crater which is relatively deep as compared to its width; heals with the formation of scar tissue in the wall. Before healing begins this crater usually shows slightly undermined margins. An excavation in the surface of a carcinoma results from necrosis in the growth and digestion of the necrotic material. This crater is often or usually flat and saucer-like, but in the penetrating type of cancer it may be deeper and in uncommon instances the shape of the crater may simulate that of a peptic ulcer.

Under dietary treatment the peptic ulcer crater reduces both in depth and in transverse diameter. The excavation in the carcinoma, on the other hand, may fill in to a certain extent when protected from digestion, but it usually reduces little in transverse diameter as compared with the depth of the crater. Unfortunately, the partly healed benign crater may have a shape simulating that of the ulcerating cancer, and if the patient first comes under observation at this point, the differentiation may be impossible.

(b) The development of carcinoma in the mucosa adjacent to the edge of a crater which has otherwise the x-ray and the his-

tologic characteristics of a benign ulcer. This poses a particularly difficult problem. This possibility is suggested when an ulcer does not respond satisfactorily to a test of treatment.

Throughout the past decade—and longer—the postoperative mortality of gastric resection has been steadily reduced. In the best hospitals it now averages one per cent or less in patients with gastric ulcer. Consequently, in such institutions, if the x-ray examination reveals a lesion in the stomach, the character of which is consistent with a carcinoma, and if, after resection, the lesion is found to be not a carcinoma, that patient may justly regard himself as fortunate.

SMALL INTESTINE

Primary malignant tumors of the small intestine are uncommon but are none the less important to the unfortunate individual who happens to possess one. Diseases of the small intestine are best disclosed by a procedure called the "Small Intestine Study." This means a series of films at half hour intervals after the ingestion of a barium preparation, with the necessary fluoroscopic observations.

Under certain conditions not fully understood, the tiny crystals of barium sulphate stick together and do not adhere to and outline accurately the inner surface of the intestine. This phenomenon is called flocculation. The small intestine study is best done with non-flocculating barium preparations. Under certain uncommon circumstances a small intestine enema is used, in which the whole intestine is filled by opaque material injected through a tube into the upper part of the jejunum, or a Miller-Abbott tube.

The commonest primary malignant tumors encountered in the small intestine are carcinoma, lymphosarcoma and carcinoid, although the last mentioned may not be malignant.

These tumors in the great majority of instances produce a narrowing of the lumen and destruction of the mucous membrane. The narrowing may be the result of the projection of a fungating mass into the lumen, or of an infiltrating growth causing an annular constriction. The abnormality is more easily demonstrated in the upper half of the intestine and in the terminal ileum than in the loops which usually lie low in the abdomen or in the pelvis.

Golden and Morales<sup>1</sup> recently published a study of 168 cases of organic disease of the small intestine from the records of the Presbyterian Hospital in New York. These included 23 patients with carcinoma, 20 with lymphosarcoma, 14 with carcinoid, and 8 with malignant neoplasms of other types. One patient had two carcinomas, 7 had two or more lymphomas, 5 had two or more carcinoids, and 3 had two or more malignant neoplasms of other types. Multiple lesions, therefore, appear to be not uncommon.

The presenting symptoms of organic disease of the small intestine are (1) abdominal pain, (2) intestinal bleeding, and (3) diarrhea. One or more of these symptoms may be present in any given case. Diarrhea is rare with neoplasms and common with inflammations.

Usually, but not always, inflammations can be distinguished from neoplasms. The mere fact of the demonstration of an abnormality of the small intestine, in addition to negative results of examination of the stomach, duodenum and colon, usually suffices to solve the clinical problem. For example, in the presence of intestinal bleeding, evidence of an abnormality of the small intestine consistent with a neoplasm is sufficient to warrant surgical investigation.

The location of the different lesions is of interest. Of the 23 cases with carcinomas, 16 were found in the jejunum. Nineteen of 27 lymphomatous lesions were found in the ileum, and 13 of 14 carcinoids were found in the ileum. The inflammations were much more frequent in the ileum than in the jejunum.

Of the 24 carcinomas, 19 were less than 8 cm. and 14 were less than 4 cm. in length. (One patient had two carcinomas.) The great majority of the lesions of regional enteritis were more than 8 cm. in length but more than half the tuberculous lesions were less than 8 cm.

Of the 168 cases studied, 133 had x-ray examination, and in these an abnormality was demonstrated in 121 (90%). Abnormalities were shown in 17 of 19 carcinomas, in all 13 lymphomas, in 7 of 8 carcinoids, and in 5 of 6 other malignant tumors.

These examinations were done by a relatively large number of persons with a wide

range of age and experience. It seems apparent that x-ray examinations can disclose malignant tumors of the small intestine in a large proportion of the cases.

#### LARGE INTESTINE

The detection of cancers of the colon is in most instances best accomplished by the barium enema, sometimes with air insufflation following evacuation of the barium (the double contrast method). In occasional instances lesions of the cecum are better demonstrated after the ingestion of barium.

The preparation of the patient for the barium enema is of great importance. The colon must be thoroughly cleaned out. Castor oil given the afternoon or evening previous to the examination and copious saline cleansing enemas the morning of the examination are necessary, except when contraindicated by diarrhea. I have never seen this preparation make bleeding worse. It is desirable to put the patient on a low residue diet for two days, preferably with a preliminary cleaning out at the beginning of this period.

Carcinomas of the colon may be roughly divided into two types: (1) annular infiltrating, and (2) fungating or mass producing. The great majority, about 75 per cent, occur in the sigmoid and rectum. More than one cancer may be present in the colon at the same time. From necropsy observations (Olsson)<sup>2</sup> this is likely to happen in from 1 to 2 per cent of cases.

Carcinoma of the colon cannot be discussed without mentioning the problem of detection of polyps. These growths may be single or multiple and one or more may be carcinomatous. The physical texture of the polyp is important. Some are firm, stand out away from the wall, and are relatively easy to detect. Others are soft, flabby, lie in intimate contact with the wall, and may be very difficult to detect. It is sometimes necessary to repeat the examination, particularly if the preparation of the colon has not been good, to be sure that a significant shadow is present.

The detection of polyps of the colon requires the "double contrast" examination. After careful preparation of the colon, a barium enema is given. After evacuation of most of the opaque material, a sufficient

1. Golden, Ross, and Pablo Morales: Radiological Examination in Organic Diseases of Small Intestine, J. A. M. A. Vol. 153, No. 16 (Dec.) 1953.

2. Olsson, O.: Cancer Coli Multiplex, Acta Radiol. 26: 415, 1945.

quantity of air is put into the colon to separate the walls. Films, preferably stereoscopic, are made in the supine, prone and oblique projections. Non-flocculating barium preparations are better than barium-water suspensions because the opaque material sticks to the wall.

Annular carcinomas produce narrowing, with destruction of the mucous membrane. Fungating carcinomas project into the lumen, produce a "filling defect," and sometimes cause spasm of the circular muscle, with narrowing of the lumen simulating the effect of an annular growth.

The constriction of malignant disease must be differentiated from that produced by inflammation, e. g., by diverticulitis. The constriction of a carcinoma is usually relatively short, 5-6 cm. or less, with evidence of destruction of mucosa, and with a sharp abrupt transition into normal intestinal contour. The constriction of inflammation is often longer, with exaggeration of the mucosal contours instead of destruction of the mucosa, and with an oblique sloping transition into normal intestine. Unfortunately, carcinoma may be associated with inflammation, which sometimes makes the differentiation more difficult.

Carcinoma of the rectum should be detected by the clinician by digital and proctoscopic examinations, which should invariably be done in every patient with symptoms consistent with disease of the large intestine before a barium enema is given. However, deformities of the rectal contours, or of the mucosal contours as shown on post-evacuation films, should always be looked for by the radiologist.

Carcinomas in certain areas of the colon may be difficult to detect. A flat infiltrating growth at the rectosigmoidal junction may be very difficult to disclose. For this reason sigmoidoscopy should invariably be done. Growths may be missed in the flexures, in the ascending colon where a bend is often present, or in the cecum when it is low in the pelvis, unless observations are made in oblique positions. The ileocecal valve lips may be enlarged and produce a smooth symmetrical defect around the ileocecal junction which might be confused with a carcinoma. The inverted appendiceal stump produces the small round defect of a polypoid mass.<sup>3</sup>

3. Golden, Ross: *Radiologic Examination of the Small Intestine*, Philadelphia, J. B. Lippincott Co., 1945.

Following resection for carcinoma, or for inflammatory constrictions, an end-to-end anastomosis is usually done. The question of postoperative recurrence often comes up. In a study of 42 postoperative cases, Sharpe and Golden<sup>4</sup> found that a narrow, slight bilateral constriction at the site of anastomosis usually could be demonstrated for months or even years, and which tended to diminish with the passage of time. Recurrence of the carcinoma at the site of anastomosis produced a unilateral narrowing due to a small mass projecting from the wall in 3 of the 42 cases.

#### CONCLUSION

The detection of cancer of the stomach, of the small intestine, or of the large intestine by x-ray methods presents problems which have certain elements in common. In all of them the examination must disclose an abnormality of form or movement of the viscus which must be differentiated from various benign diseases. The ease or difficulty with which the abnormality is detected depends upon the location of the disease in the involved viscus and upon the gross growth characteristics of the tumor, i. e., whether it produces a projecting mass or whether it merely infiltrates the wall. But probably of most importance are the ability, experience and intellectual integrity of the radiologist.

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4. Sharpe, Myer, and Golden, Ross: End-to-End Anastomosis of the Colon Following Resection, *Am. J. Roentgenol.* Vol. LXIV, No. 5 (Nov.) 1950.

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**Sore Tongue**—Sore tongue, like sore mouth and sore throat, is a common complaint. The pathologic process may vary from a simple lesion to one of malignant proportions. Changes in the color of the tongue may develop and have no clinical significance. On the other hand, these changes may indicate mild or serious underlying systemic disease or a nutritional deficiency, or both. Since antibiotic therapy has come into general use, mucous membrane reactions in the oral cavity have been common experience.

In every case of sore tongue a prompt diagnosis is imperative. Palliative or temporizing measures should not be instituted until a conclusive diagnosis has been made. The potentiality of syphilis, tuberculosis or cancer, or combinations of these, in lesions of the tongue must not be minimized. Procrastination in performing laboratory tests and biopsy can lead only to disastrous consequences because delayed therapy too frequently proves futile.—*Hollender, J. Florida M. A., March 1954.*

THE DIAGNOSIS AND TREATMENT OF OPERABLE  
AND INOPERABLE PROSTATIC CANCER

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Prostatic cancer is symptomless in its initial and curable stage. Responsibility for its initial diagnosis rests with the general practitioner.

Unfortunately, at present there are no special tests of blood or urine diagnostic of operable prostatic cancer, operable in the sense of removing the cancer in its entirety. In this age of great medical progress the greatest diagnostic tool in the discovery of early prostatic cancer is still the index finger, right or left. The finding of any hard area in the prostate on digital examination through the rectum is an absolute indication for urologic consultation. Rectal examination should be a part of every physical examination. Periodic rectal examination of every male over 50 years of age offers the only possibility at present of finding more cases of early operable prostatic cancer.

OPERABLE PROSTATIC CANCER

Presented with an individual with a hard nodule in the prostate gland, with no evidence of local extension on rectal examination, a normal serum acid phosphatase and a negative pelvic x-ray, the course is clear. There should be no choice! If biopsy of the nodule in the prostate reveals cancer, total prostatectomy should be done.

As urologists, in what percentage of patients do we now find operable cancers? The answer to this question varies from clinic to clinic and is often dependent on whether or not total prostatectomies are practiced. A reasonable figure throughout the United States is 5 per cent. At our institution, for the period 1904 to 1948, the figure was 10 per cent. During the past few years it has increased to over 15 per cent. Increasing awareness and periodic rectal examinations should increase this figure. In the Army, where an annual physical examination is required, one-half of those with prostatic cancer are found to have localized cancers which are operable.

In that at present surgical removal of prostatic cancer is the only means of obtaining a cure of prostatic cancer, what success has been obtained with total prostatectomy? In answer to this, allow me to refer to a survey of the cases seen at our institution in which figures are available for 190 cases of proved prostatic cancer subjected to total perineal prostatectomy. On the basis of preoperative rectal findings, these were divided into two groups, one in which the cancer was judged to be confined within the prostatic capsule (intracapsular) and one in which extracapsular growth was palpable. Table 1 shows the results in 132 cases of the 190 proved cancers, 132 representing the number operated on prior to 1943, which permitted a five-year evaluation when this report was gotten together in 1948. This year a second five-year appraisal will be possible.

TABLE 1.—TOTAL RADICAL OPERATIONS FOR CANCER OF PROSTATE PRIOR TO MAY 1, 1943: 132 CASES

Local condition as determined on rectal examination	Extraprostatic extension	Intraprostatic (confined to prostate)
Cases	54	78
Died with cancer	40	23 (3 over 5 years)
Died without cancer	8 (4 lived 6 to 9 years)	30 (16 lived 5 to 27 years)
Living with cancer	3	1 (5 yrs. 9 mos. without castration or estrogen)
Living without cancer	3 (6 to 9 yrs. without castration or estrogen)	24 (6 are 10 yrs. or more, 3 are 9-10 yrs.; without castration or estrogen)

In the group of 54 cases with palpable evidence of extraprostatic extension, 43 patients are known to have died with cancer or are living with cancer. Only 7 lived 6 to 9 years without evidence of cancer (4 of 8 dying without cancer).

In the group of 78 patients in whom, on rectal examination, the growth felt confined to the prostate, 40 are living, or have lived, 5 years or more without evidence of cancer, or slightly over 50 per cent.

Read before the 1954 Cancer Seminar, Birmingham, January 27.

Space does not permit a more detailed accounting; however, many others advocating total prostatectomy for early prostatic cancer have enjoyed results similar to those reported in some detail above. Thus Young, Colston, Smith, Kimbrough, Hinman, Belt, as well as many others, have reported five-year survival rates close to 50 per cent.

Mortality figures are reasonable for the operation. In the last 10 years at our institution there were 6 deaths in 127 cases. In the last 100 cases there were 3 deaths. In the last 50 cases there were no deaths.

#### INOPERABLE PROSTATIC CANCER

It has been stressed that early in the course of prostatic cancer symptoms and signs may be entirely absent. Later they may be of an obstructive nature, or they may be indicative of metastases.

Late in the disease, rectal findings are usually unmistakable. Characteristically, the induration of the prostate is best described as "stony hard," and the surface of the gland is irregular or nodular. The extent of this induration may be great, with involvement of the entire gland and the seminal vesicles. In far advanced cases the membranous urethra, bladder neck, and rectal wall may be invaded, and the entire portion of the pelvis which can be felt rectally may be "frozen."

*X-ray examination.* A pelvic x-ray is an essential part of the examination of any patient suspected of having prostatic cancer. Without question, in disseminated prostatic cancer, the bones of the pelvis and lumbosacral spine are the most frequent sites of osseous metastases. Thus a pelvic x-ray will tell us the presence of metastases in 65 per cent of the cases of advanced prostatic cancer. Notoriously, metastases to bone from prostatic cancer are osteoblastic. However, they may be osteolytic or mixed.

Frequently, one must distinguish Paget's disease (osteitis deformans) from metastatic prostatic cancer. In Paget's disease the pelvis, the femur, and the skull are the bones most commonly involved. Bone density is tremendously increased, and the character of the density may be described as "trabeculated" in contrast to the nodular consistency of osteoblastic prostatic cancer metastases. At times, areas of decreased density (cysts) seen in Paget's disease may be confused with osteolytic lesions of cancer. When in doubt it is wise to examine

the skull, where in Paget's disease the tables show marked thickening, patchy areas of great density, and at times huge areas of decalcification.

*Serum acid phosphatase determination.* The determination of serum "acid" phosphatase has proved to be a most important adjunct in establishing the diagnosis of disseminated prostatic cancer. Most laboratories throughout the country now make this analysis. Fresh serum preserved with a drop of toluol is adequate for the test.

In summarizing the importance of the determination of serum "acid" phosphatase in the diagnosis of prostatic cancer, it can be said with considerable accuracy that an elevation of serum "acid" phosphatase is almost pathognomonic of metastatic prostatic cancer, but a normal value does not exclude dissemination, nor does it exclude localized prostatic cancer. Given 100 cases of metastatic prostatic cancer, 65 would show a significant elevation of this enzyme, 35 would not. Values are almost never elevated in benign prostatic hyperplasia.

*Treatment.* By and large, the objectives in the treatment of disseminated prostatic cancer have been two-fold: (1) the relief of urinary obstruction and (2) the relief of pain. For a number of years preceding hormonal therapy, urinary obstruction was usually treated by transurethral resection, and pain by irradiation of nerve roots or by administration of alkaloids.

Present methods of endocrine management of disseminated prostatic cancers, which cannot be removed surgically, began in 1939 with the work of Dr. Charles Huggins, my chief at that time. The simple theory on which endocrine therapy is based was formulated as a "biological syllogism" by Huggins, as follows: "In many instances a malignant prostatic tumor is an overgrowth of adult epithelial cells. All known types of adult prostatic epithelium undergo atrophy when androgenic (male) hormones are greatly reduced in amount (after castration or inactivated estrogen administration). Therefore, significant improvements should occur in the clinical condition of patients with far advanced prostatic cancer subjected to castration (or estrogen administration)."

Since the work of Huggins and his associates, physicians have treated hundreds and hundreds of patients suffering from

prostatic cancer, either by surgical castration or estrogen administration or a combination of both. Pronounced improvement, sustained or unsustained, has often been observed, and at times is striking, improvement often taking the form of immediate relief of pain, increase in appetite, a gain in weight, a disappearance of the anemia so frequently associated with the disease, shrinkage of the local lesion to the point where it cannot be felt rectally, and disappearance of x-ray evidence of metastases. Frequently, the serum "acid" phosphatase, if elevated, returns to normal or near normal. Not all are so fortunate.

In that ten years has elapsed since the introduction of endocrine treatment, what are the long term results? What is the best form of endocrine treatment? What can we offer in relapse?

In the Journal of the American Medical Association for August 12, 1950, Nesbit and Baum presented a statistical survey of 1818 cases of prostatic cancer subjected to endocrine therapy. They were commissioned by representatives of fourteen clinics throughout the United States, including the Brady Urological Institute, to study this mass of material.

In a study of the five-year survival of 324 patients treated by castration and/or estrogen therapy who were without metastases on first admission, comparison was made with a control series of 783 patients collected by Nesbit and Plumb in a period before endocrine therapy was practiced (1925-1940). Castration plus immediate institution and continuous administration of diethylstilbestrol (5 mg. per day or less) resulted in the greatest percentage five-year survivals, 44 per cent surviving compared to a control figure of 10 per cent. Next in order of effectiveness came orchiectomy alone, then estrogen alone, both significantly less effective than combination of the two.

Those having metastases on first admission fared less well. The results for a series of 263 patients in this category showed that close to 20 per cent lived five years, either with combined castration and estrogen therapy or castration alone. Estrogen alone was significantly less effective, only 10 per cent living five years, approaching the 6 per cent observed with no endocrine treatment.

With regard to the treatment of those who have experienced only temporary re-

lief of symptoms secondary to either castration or estrogen alone, Nesbit and Baum, in the same communication described above, state, "There appears to be no advantage of one form of therapy over another when used in the treatment of relapse." For this the authors claimed no statistical significance. In this regard, it is the opinion of the author that at times castration may afford relief during relapse after estrogen therapy, but that it is rare to observe beneficial effects with estrogen administration during relapse after castration.

It seems clear that at the present the best we can do is to remove prostatic cancers which we judge are operable, and castrate and give estrogen to those patients whose cancers have spread beyond the boundaries of the gland.

What the future holds no one knows. In the time which remains, I should like to discuss with you some of the more recent therapies directed toward control of inoperable prostatic cancer.

In 1945 Dr. Huggins and the writer published the results of a study in which bilateral adrenalectomy was performed in four patients with disseminated prostatic cancer who were in relapse after previous remission following combined castration-estrogen therapy. On the basis of urinary 17-ketosteroid determinations before and after castration, we wondered if relapse might not be due to the production of androgens by the adrenal. We were fully aware, however, that all urinary 17-ketosteroids are not androgenic.

Four total adrenalectomies were performed. Three patients survived less than 11 days; one patient lived 116 days. Cortisone was not available and management consisted largely of endeavoring to maintain a normal serum electrolyte pattern with DOCA and judicious use of salt.

In the patient surviving 116 days, urinary 17-ketosteroids and urinary androgen (bioassay) fell to very low levels and yet at death cancer was widespread.

Adrenalectomy for prostatic cancer was revived in 1951 by Huggins and Bergenstal. At this time cortisone was available and of a consequence management much easier.

Recently, completing a monograph on *The Surgery of the Adrenal Glands* as one of the American Lecture Series in Surgery, I reviewed all the cases of adrenalectomy done

to date, not only for prostatic cancer but for cancer of the breast as well. Time does not permit review of these data. However, I will read to you the most recent results in a series of 10 patients adrenalectomized for prostatic cancer and reported by the Memorial Hospital group: "Three died in the immediate postoperative period, one from cerebral hemorrhage (2 days), one from carcinomatosis (11 days), and one from myocardial infarction (21 days). Six of the remaining seven died within 33 to 294 days after adrenalectomy, two from adrenal insufficiency and four from cancer." The remaining patient was living at the writing of this addendum, his 159th postoperative day. Quoting further: "All seven patients had temporary subjective improvement varying from 14 to 210 days, averaging 82 days. Only two of the seven had objective improvement lasting 90 and 133 days. The most striking beneficial response to adrenalectomy was relief of pain." There has not been a publication from the Huggins laboratory on adrenalectomy for prostatic cancer since that of Huggins and Bergenstal, to be found in *Cancer Research* for 1952, and the results in this series of seven patients are quite comparable to those of the Memorial Hospital group. Of the seven, there was one postoperative death, and they judge that three of the remaining six had a clinical remission of the disease of considerable magnitude. One patient died of acute pulmonary edema 49 days after adrenalectomy. The remaining four had been observed for periods of 4½ to 9 months at the time of the report. Quoting them: "Perhaps the most striking observation has been the immediate and persistent relief of crippling pain in the bones." In conversation with Dr. Huggins since this report, I have learned that he is performing fewer and fewer bilateral adrenalectomies for prostatic cancer and more and more for cancer of the female breast.

Unfortunately, in most studies to date an insufficient amount of time and effort has been spent in determining the mechanism of action of bilateral adrenalectomy, and it is my feeling that, until such is done, little further advance will be made. During the past year there has been further evidence to support the belief that cortisone, so necessary in the maintenance of the bilateral adrenalectomized human, is metabolized to androgen. Again this is hard to reconcile

with theories which assign improvement following adrenalectomy to androgen withdrawal. At present it is my feeling that adrenalectomy for cancer of the prostate and breast is empirical. As Huggins suggests, the administration of androgen or estrogen is for advanced breast cancer in the female. If results were better than they are to date, one would be justified in advising this procedure in the individuals hopelessly afflicted with these cancers. In that they are not, it is my belief that these should be considered as research tools and only carried out in institutions equipped for research.

In my paper entitled "What Makes The Prostate Grow," to be found in *The Journal of Urology*, Vol. 70, 1953, I have outlined what we know concerning the role of the pituitary in prostatic growth. In an effort to determine mechanisms, we felt that the pituitary gland should be removed in a patient with far advanced prostatic cancer.

In September 1948, hypophysectomy was carried out in such a patient but was unsuccessful, the patient surviving only 11 days. No further attempts were made until November 1951, by which time cortisone was readily available. Since then, Dr. A. Earl Walker performing the surgery, five additional attempts have been made. Whereas no effort is made to present a detailed account of these five, a few salient observations follow:

There was one postoperative death (day 3) in five. In this one we were unable to determine the cause. Postoperative management similar to that for bilateral adrenalectomy, though not easy, was no more difficult than for adrenalectomy.

Four patients had relapsed on combined castration-estrogen therapy; one had received no previous endocrine therapy. Subjective and objective improvement occurred in 1 in 4 of these previously treated and in the 1 patient without previous endocrine therapy. One died recently, living 13 months postoperatively, having been treated previously by castration and estrogen. He was in good clinical condition and tests indicated that hypophysectomy was grossly complete; sections of the sella have not as yet returned from the laboratory. At autopsy the cause of death was determined to be secondary to cerebral hemorrhage. There appeared to be considerable regression of the metastatic prostatic cancer. Survival times for the other four were 3 days, 6 weeks, 5.5 months,

and 9 months. The patient surviving 5.5 months had no endocrine treatment prior to hypophysectomy, and just before his death from a massive pulmonary embolus 5 days after an exploratory laparotomy for acute appendicitis, his general condition was excellent. He had gained considerable weight, was entirely free of back pain which had required morphine previous to operation, and on rectal examination his prostate was smaller and softer. At autopsy definite regression of the cancer was seen; the testes were distinctly smaller than normal, and the only remains of the pituitary consisted of a small group of cells in the dura lining the sella.

Much more needs to be done. Though our cases are few, observed improvement in 2 patients, one with testes intact and one castrate, suggests that the action of the pituitary on prostatic cancer may be mediated through both the testes and the adrenal. It may be a direct one. Failure to benefit the two surviving hypophysectomy and previously treated by castration-estrogen therapy cannot be explained. However, both had received little benefit from castration and estrogen, and, according to Huggins, response to bilateral adrenalectomy is also poor if improvement following castration-estrogen therapy is poor.

Since March of 1953 we have performed three so-called adrenal shunt operations for prostatic cancer. Briefly, by freeing all vascular connections to the left adrenal except those to and from the renal vessels, left adrenal blood can be presented to the liver first by removing the spleen, dividing the renal vein and by joining the renal to the splenic vein. At a second operation, if the left kidney is seen to function on pyelography, the right adrenal gland can be removed. Cortisone and DOCA are not required to maintain these patients. According to our experimental data the liver inactivates androgen. One of these patients is alive. All have shown regression of the local cancer. One is in good clinical condition and has healed a pathologic fracture.

Before concluding, I should like briefly to give you my reaction to the use of either castration or estrogen therapy in an effort to make operable prostatic cancers which have extended locally. I have followed this form of therapy since its introduction by my two associates, Dr. Colston and Dr. Brendler, in 1946. Whereas the operation

itself may be made easier technically, I am not convinced to date that any patient has been cured nor that the average survival time is longer.

Lastly, I believe that in all studies involving the treatment of cancer of the prostate, insufficient attention has been paid to what I call the "biological potential" of the cancer. Admittedly, we have used almost all of the yardsticks available to us at present, but none really tell us the degree of malignancy of any given cancer, and hence are of little prognostic value.

May I attempt to illustrate what I am driving at by referring to two patients recently seen again at the Brady Institute: The first, a man age 75, was seen in 1928 with signs and symptoms of a benign obstructing prostate. A simple perineal enucleation was carried out at that time, and sections made on the tissue removed revealed an adenocarcinoma. Within one year, although there were no signs of metastasis, examiners felt that the cancer had extended beyond the capsule of the gland and that total prostatectomy was not indicated. The patient was lost track of until approximately six months ago when he returned to the dispensary in acute retention. On rectal palpation the prostate was large and nodular. It was judged cancerous and definitely inoperable. Serum acid phosphatase levels were normal and x-rays revealed no evidence of metastasis. A transurethral resection for relief of obstruction was done and sections on this tissue showed adenocarcinoma indistinguishable from that removed 25 years before. In any series, this would be a 25-year cure, no matter what was done.

A second case is quite similar. The patient, seen by one of our staff in 1941, was felt to have an early operable prostatic cancer. A perineal biopsy revealed a small nodule which, on frozen section, proved to be an adenocarcinoma. A total prostatectomy was done at the same sitting and yet multiple permanent sections failed to reveal any cancer, indicating that the biopsy was generous and had removed the entire cancerous nodule. The patient did exceptionally well until 1951. As a matter of fact, he continues to do well, and yet since 1951 his bones are seen to be riddled with cancer and his phosphatase elevated. Endocrine treatment is now being given.

Based on these two cases alone, one might

be inclined to think that adenocarcinomas were less malignant than undifferentiated prostatic cancer, and yet a previous attempt at correlating the length of survival with cell types has lead me to believe that no significant relation exists and that one cannot predict, on the basis of cell type, the response to any particular form of therapy. This situation also pertains to breast cancer as well.

In an effort to shed more light on the "biological potential" of a cancer, we have just initiated a study which will attempt to correlate what we know now about prostatic cancer with the ability of a prostatic cancer to survive in the anterior chamber of the guinea pig eye. Such a study will take years.

The road ahead is long and hard. Someone might make a discovery tomorrow which might put us ahead many years, but I doubt it. I do not think this is a pessimistic attitude but a realistic one. A pessimist would not be in this field. Being a realist, I think that for the immediate future we, as urologists, should make every effort to educate the public and physician in the early recognition of prostatic cancer, at the time when it is operable and at a time when total prostatectomy in the hands of most offers a 50 per cent chance of 5-year survival without cancer. In the meantime, many of us in the laboratory will endeavor to unravel some of the problems discussed. These largely revolve around the early chemical detection of prostatic cancer, the biological potential of any given tumor, the metabolic action of steroids, and the nature and action of competitive steroids.

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**Hand Rehabilitation**—Serious disabilities of the hand are rarely single and the precipitating cause usually sets up a chain reaction. As fibroplastic growth is present as early as 72 hours following injury, early rehabilitative treatment is indicated to prevent deformities. If persistent faulty positioning and prolonged inactivity are permitted, changes in the soft tissue will occur leading to a stiffened, non-functional appendage. Early treatment consisting of elevation, gentle massage, low degree heat, and guided exercises is indicated to provide proper nutrition and maintain the mobility of the joints, muscles and tendons. Splinting of the hand in the position of function will insure maintenance of the muscle balance and provide the necessary rest for the segment. Accurate evaluation of the hand disability is the primary principle of hand rehabilitation, and this must be founded on accurate knowledge of functional anatomy.—Britt, *South. M. J.*, March '54.

**Care of the Injured Hand**—Little need be said concerning first-aid except that it consists only in the application of a compression dressing and a splint, and to stress the fact that a tourniquet is very seldom required. The compression dressing almost always will take care of bleeding; a tourniquet as usually applied simply blocks venous return and promotes hemorrhage.

The diagnosis of the extent of the injury is made by inspection, supplemented of course by x-rays where indicated. The wound is never probed or the borders retracted to discover divided nerves and tendons. The division of these structures is discovered by examination for motion and sensation. A general physical examination and blood and urine tests are carried out on every patient who is to get a general anesthetic and the surgeon makes sure the patient's stomach is empty, by lavage if necessary.

Operative care of the wound is done under operating room conditions even for apparently trivial wounds. The severe injuries are, of course, cared for in the operating room, usually under a general anesthetic.

Operations on the hand are carried out in a bloodless field secured by means of a blood pressure cuff. The hand is elevated for a few minutes, and the cuff is then rapidly inflated to 280 to 300 mm. Hg. This is maintained until the surgeon has completed the cleansing and wound excision, and is then released. After a few minutes of release, the wound is inspected, bleeders caught and ligated, and the cuff is again inflated and the operation completed. The cuff is finally released only after the compression dressing is applied.

The wound is prepared for operation simply by washing carefully with warm water and soap for from ten to twenty minutes, and is then draped for excision.

The excision of devitalized tissues is one of the most important steps in its care, and must be accomplished in all wounds. It has top priority in the treatment. It is the surgeon's aim in carrying out this excision to remove all tissue so severely damaged that it cannot survive. The decision is often not easy to make since appearances may be deceptive, and removal, especially of skin, may produce difficult problems of closure.—Mason, *Louisiana State M. J.*, March '54.

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It is well known that hookworm disease, malaria, and tuberculosis are intimately related to malnutrition in many persons who suffer from these diseases, but whether or not the relationship is causal defies affirmation except in certain individual situations. The sufferer of malaria or hookworm disease may be malnourished because of anemia that reduces his productive and earning capacity and therefore his ability to provide for his food needs. Or the malnourished person, as a result of diminished resistance, may fall an easy victim to such diseases. Whatever may be the relationship, it is clear that the well-being of the individual is compromised by malnutrition as well as by certain specific diseases.—*Institute of Inter-American Affairs, Pub. Health Reports*, Nov. 1953.

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## THE MONTH IN WASHINGTON

Just about a year ago the Hill-Burton hospital construction program was under heavy attack in the House Appropriations Committee. But the damage was not permanent. The program has made a complete recovery. More than that, Congress shows every intention of doubling the appropriation for the program, but earmarking the additional money for grants to diagnostic and treatment centers, rehabilitation facilities, hospitals for the chronically ill, and nursing homes. At this stage the legislation to stimulate health facility construction is believed to be closer to enactment than any other major health project of the Eisenhower administration. Although the main objectives have not been altered, some significant changes were made in the bill by the House Interstate and Foreign Commerce Committee in two weeks of intensive work at closed-door sessions. Then, in mid-March, the Senate committee took up the bill and considered additional amendments.

Most changes are designed to tighten up eligibility for grants. For example, money could go to only two types of diagnostic or treatment centers, those operated by and for a governmental unit or by a group that also operates a nonprofit hospital. Nor would centers or nursing homes be eligible unless under medical supervision or operated by an association that also operates a hospital.

Another change written into the bill would rule out a project if it were not to be open for full and unrestricted use by the general public. Thus labor union, fraternal, and prepayment health plans could not benefit if they offered their own subscribers any advantage in service at the center or hospital.

On the financial side, several amendments have been tentatively adopted. One would allow states to use the original Hill-Burton formula for apportioning money among projects, or to accept a flat 50% federal contribution. (As in the original Hill-Burton act, the poorer states would be allocated more per capita.) States would be allowed to pool their allocations for construction of interstate facilities, and the United States would be authorized to recover its proportionate share of a project if at any time the project were converted to profit use or were transferred to interests which for any other reason would not be eligible.

Of major interest to the medical profession, although not far along on its legislative course, is the administration's proposal for subsidizing prepaid health plans for federal civilian employees. The U. S. would pay a maximum of \$26 per year, to be matched by the employee, for the purchase of any type of prepaid insurance. Any cost above \$52 per year would have to be borne entirely by the employee.

As a part of the program, the administration is proposing that payroll deductions be authorized, a concession the insurance and prepayment insurance organizations have been urging for years. Currently federal executives differ on whether payroll deductions would be "legal," but none is willing to risk authorizing deductions in the absence of specific approval from Congress.

Still following a slow and controversial course is the administration's proposal for reinsurance of health plans. Early in the session—with the ardent support of Chairman Charles S. Wolverton of the key House committee—this legislation appeared pointed toward enactment. However, the Department of Health, Education, and Welfare was not satisfied with Mr. Wolverton's bill and decided to draft one of its own. The drafting consumed many weeks—time that may prove fatal with a Congress hoping to adjourn early for the fall elections.

The Defense Department, made uncomfortable by a few suspected subversive physicians and dentists it doesn't quite know what to do with, is asking for an amendment to the Doctor Draft act. The department's problem is this: The most recent Court of Appeals decision holds that physicians or dentists drafted or called up from the reserves must, under the Doctor Draft act, either be commissioned or discharged. So, technically, a man who refuses to fill out his loyalty questionnaire would be rewarded by a release. To correct the situation, the Department is asking that the law be changed to allow it to withhold a commission from a loyalty suspect, yet keep him on duty for the specified time in noncommissioned status and assigned to professional duties.

The American Medical Association is continuing its support of Senator Bricker and others who are convinced they still can enact a resolution calling for an amendment to restrict international agreements. The Association's position is that unless a safe-

guard is written into the Constitution, future international agreements could impose on the country social and medical care programs that Congress itself would not approve.

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#### THE DEATH OF DR. McLESTER

Dr. James Somerville McLester, 88th President of the American Medical Association and for many years chairman of its Council on Foods and Nutrition, died Feb. 8, aged 77. Dr. McLester was born in Tuscaloosa, Ala., Jan. 25, 1877. He obtained his collegiate education at the University of Alabama, where he received his bachelor of arts degree in 1896. In 1899 he was granted his degree of doctor of medicine at the University of Virginia Department of Medicine in Charlottesville. This was followed by postgraduate studies at the universities of Göttingen and Freiburg in Germany, from which he returned in 1902 to become professor of pathology in the Birmingham Medical College. Within a few years his title was changed to professor of medicine, and he began the practice of internal medicine in Birmingham. In 1907 and 1908 he took further postgraduate work in Berlin and Munich. The Birmingham Medical College was discontinued in 1912, and for a few years Dr. McLester was not actively engaged in teaching. After the establishment of a school of the medical sciences at the University of Alabama, he was appointed professor of medicine in 1919 and remained in that position for many years. Dr. McLester had a prominent part in organizing a four year medical school at the University of Alabama in Birmingham, from which the first class was graduated in 1946. At the time of his death he held the title of professor emeritus of medicine. In World War I he was commissioned a major in the medical service, and early in 1918 he was promoted to lieutenant colonel in the American Expeditionary Forces, becoming commanding officer of Evacuation Hospital No. 18. On his return from military service in 1919 he resumed practice in Birmingham and became professor of medicine in the University of Alabama School of Medical Sciences. During World War II he was chairman of the subcommittee on nutrition of the National Research Council, which committee was concerned with the feeding of the armed forces. He was also a member of the Food and Nutrition Board of this council.

Dr. McLester was secretary of the Section on Practice of Medicine of the American Medical Association in 1917 and 1918, and chairman of this section at the annual session in 1920. He served as a member of the House of Delegates from the Section on Practice of Medicine in 1921, and again from 1929 to 1933. In 1929 he became a member of the Council on Medical Education and Hospitals, serving until his election as President of the American Medical Association in 1934. Since 1933 he was a member of the Committee on Foods (later the Council on Foods and Nutrition) of the Association (with the exception of the two years of his Presidency) and chairman from 1940 to 1952. The Board of Trustees of the American Medical Association, through its Council on Foods and Nutrition, on Nov. 28, 1953, awarded him the Joseph Goldberger award for outstanding contributions in the field of clinical nutrition. Dr. McLester was thus cited for his outstanding role in translating the results of nutrition research into human values and in the integration of nutrition into the teaching of all phases of medicine. A specialist certified by the American Board of Internal Medicine, he was associated with many scientific societies, being a fellow and past regent of the American College of Physicians, a member of the Association of American Physicians, the Society of Clinical Investigation, the American Climatological and Clinical Association, and the Southern Medical Association. In 1920 he was president of the Alabama State Medical Association and in 1910 president of the Jefferson County Medical Society. He served as chairman of the health advisory council of the Chamber of Commerce of the United States and as a member of the general advisory committee of the National Foundation for Infantile Paralysis. From 1928 to 1935 he was a member of the State Board of Censors and State Board of Health. Dr. McLester was medical director of the Birmingham public schools and on the staff of the Hillman Hospital for many years. He wrote "Nutrition and Diet in Health and Disease," now in its sixth edition, and "The Diagnosis and Treatment of Disorders of the Metabolism." He also wrote the chapter on diseases of the mediastinum in the Oxford System of Medicine and the chapter on syphilis in Cecil's textbook of medicine. —From the Feb. 20, 1954 issue of the *Journal of the American Medical Association*.

#### DR. J. PAUL JONES ADDRESSES RURAL HEALTH GROUP

When officials of a community failed to assume the responsibility for providing medical facilities, the town's only doctor stepped into the breach and invested \$40,000 of his savings to construct a 14-room clinic. Now that the town has been convinced of the value of better facilities, steps have been taken to build a 20-bed hospital with the assistance of federal funds.

This story was unfolded in Dallas, Texas on March 6 by Dr. J. Paul Jones, Camden, who spoke before the ninth National Conference on Rural Health. The three-day meeting was held in the Baker Hotel under the sponsorship of the American Medical Association's Council on Rural Health.

Camden, with a population of 1,200, is located in the center of Wilcox county, which has 23,500 people. Of these, 17,000 are Negroes. The population is made up of either well-to-do or low income share cropper families.

In 1908, the county had 35,000 people and 38 doctors. Camden had nine physicians. Dr. Jones took up his practice in Camden in 1919, when the town had five doctors and the county, 29. His father had just completed a small six-room clinic to offer a better type of medical care.

"From 1919 to 1932, my father and I were doctor, druggist and nurse to many families within an area of 10 to 15 miles," he told the conference. "As there were no overnight beds in the clinic or town, and the roads were so bad, we did most of our practice in homes, including emergency surgery.

"When we could not use a car, horse or horse and buggy, we walked or used a skiff to reach isolated areas. Our nearest hospital was from five to 12 hours away, if the roads were passable."

By 1944, there was only one physician in Camden and only six in the county, located about 20 miles apart.

"My area of practice had stretched to 15 to 20 miles in most directions," Dr. Jones said. "Most of my work was now in the small clinic, with only eight to 10 home calls a day. I was bringing in by car or ambulance many emergency cases of illness for diagnosis and treatment.

"I was also delivering nearly all of my obstetric cases in the clinic and sending

them home in about four hours. Our nearest hospitals were now three hours distant, where I was forced to send all serious emergencies, having no place to care for them overnight."

His practice grew until he was seeing as many as 50 patients a day, and his work day stretched to 12 and often 18 hours and occasionally throughout the night.

"The demands on my time and health, caused by the scarcity of doctors and the increasing need and demand for better facilities, did not allow me to practice the type of medicine I desired and felt our community needed," Dr. Jones said.

He approached community leaders on the question of building a small hospital but was turned down because this would cost money.

"However, they were willing for me to put up the money and assume the obligations of running a hospital," he added.

Dr. Jones decided to use his own savings to build and equip a 14-room clinic.

"During the clinic's first year of operation, we admitted 235 overnight patients, and soon found we were running a small hospital, a community responsibility," Dr. Jones said.

In four and one-half years, the clinic has handled 232 overnight obstetric cases and cared for about 600 medical, surgical and pediatric emergencies, he stated.

Dr. Jones found that having facilities, trained help and a few overnight beds has caused an increase, rather than a decrease, in work. About 300 patients are being seen in the clinic weekly.

"I am back where I started, too busy to practice good medicine," he reported, sadly.

Dr. Jones said that during the last year two more clinics have been erected in Wilcox county, one by a community to attract a physician.

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## THE ASSOCIATION FORUM

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

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### ANOTHER VOICE

W. A. Dozier, Jr.

Director of Public Relations

Several of these columns have dealt with different phases of our Social Security System as presently operating. At least one article pointed out the fallacy in the minds of most people, that is that the reserve fund which the System has accumulated is ready cash which may be used to pay off claims.

Mr. Thurman Sensing in the February 15, 1954 issue of the Southern States Industrial Council Bulletin points up the matter most vividly. It is possible that you may not agree with all that Mr. Sensing says, but few will deny that some changes need to be made. Here is Mr. Sensing's editorial. Read it, and ponder on the weak points of the present system.

"If we are to continue under the Social Security system—and all indications are that we shall—the only sensible and logical way to handle it is on a 'pay-as-you-go' basis.

"The way Social Security is now handled,

it is a snare and a delusion. Most people think that the taxes paid into the government treasury for this purpose by the employee and the employer are set aside to build up a reserve for the employee's old age insurance.

"Nothing could be farther from the truth. The money is spent by the Government as fast as it is received. Nothing is left but a bookkeeping entry to show that it ever came in. *When it comes time to pay this employee his old-age benefits, additional taxes must be collected by the Government to pay for them.*

"This fact was clearly brought out in testimony by Social Security Chief Actuary Robert J. Myers, and Robert M. Ball, Acting Director of the Bureau of Old Age and Survivors Insurance, before the Ways and Means subcommittee on social security last November. Following are the pertinent passages, as reported in the press:

"Mr. Myers declared that none of the \$21.8 billion in the trust fund paid since the start of the system by the 87.7 million persons, not on the benefit rolls and still work-

ing, and their employers, will be available for benefits to them when they retire.

"All persons in this group will be dependent on future taxes paid into the system, they said.

"Isn't it strange that a nation of intelligent people could delude themselves into believing they have established a trust fund for their old age with money that has been spent for something else?

"Of course, proponents of the present system will say that the reserve in the Social Security fund is invested in government bonds and that these bonds constitute a sound reserve fund.

"In order to explode any impression that this is true, it is only necessary to refer to the testimony quoted above—that the cash funds needed to pay retirement benefits can only be obtained by means of taxes at the time the benefits are paid. *Piling up of great quantities of its own debt securities as a 'reserve' does not add anything at all to the ability of the Government to meet social security obligations.*

"But even under the present—and apparently in many ways more sensible—Administration, we are continuing to delude ourselves. The Government now proposes that an additional 10 million persons come under Social Security coverage. If this is done,

the increased income from the tax paid by these individuals will pour immense new funds into the treasury.

"In other words, while the Government is promising new benefits in the future to a large segment of the population, it will at the same time be spending in the present the money paid to provide these benefits as fast as it is received. What a wonderful invention is Social Security.

"Since all the persons paying money into the Social Security system will be dependent on future taxes for their benefits on retirement, and since the so-called trust fund is all an illusion, these persons should demand that they be taxed only to the extent necessary to provide funds for those currently drawing benefits. After all, it is their money the Government is spending; they should have some say-so about how it is spent!

"If this were done, the tax could easily revert to the 1½ per cent rate in effect last year before it rose automatically to 2 per cent on January 1, 1954. The tax, under a 'pay-as-you-go' plan, would never be assessed at a rate higher than that necessary to pay the estimated benefits for the following fiscal year.

"This is something worth writing your Congressman about."

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## STATE DEPARTMENT OF HEALTH

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### BUREAU OF ADMINISTRATION

D. G. Gill, M. D.  
State Health Officer

### DIPHTHERIA

### PREVENTABLE, CURABLE, DANGEROUS

By John M. Gibson, Director  
Division of Public Health Education

The records of the State Health Department's Bureau of Preventable Diseases indicate that 345 diphtheria cases were reported in Alabama in 1952. That is a large number—pretty close to one a day, including Sundays and holidays—for a form of illness that need not exist at all, if everyone were as careful as he should be. But it is cheering to know that 692 cases—more than twice the 1952 total—were reported in 1944. Nevertheless, as if to cool our satisfaction over this decline somewhat, we have the records

for other years. They show that the decline in diphtheria reporting has not been uniform. For example, the 1952 total was somewhat higher than that for either of the two years immediately preceding it—that is, 1951 and 1950. So diphtheria is not yet mastered in Alabama. Indeed its mastery is still a long time in the future.

Diphtheria is a communicable disease. Unfortunately, it is highly so. The germ which causes it to spread from the sick to the well—and make the well sick of course—is known as the diphtheria bacillus. The disease usually appears when this germ attacks the nose or throat. However, it is also found occasionally in other parts of the body. It produces a toxin, or poison. This, unfortunately, is not kept at the site of at-

tack. Rather, it is carried by the bloodstream to every part of the body. It may attack the heart, interfering with the proper functioning of that vital organ. It may attack the nerves, greatly reducing their power to do the work they are expected to do. It may attack muscles, producing a form of paralysis. However, as already indicated, the patient is most likely to feel its effect in the throat. It may, and probably will, cause the formation of a throat membrane, which tends to make breathing difficult. That struggling to get one's breath is one of the most frightening things about diphtheria. Many a parent remembers it for years after a child has either recovered or succumbed.

Most cases of diphtheria are produced by direct physical contact with those who have it or at least have the germs. In most instances they are picked up from diphtheria patients. But that transfer of germs may also occur between what is known as a diphtheria carrier—a diphtheria counterpart of Typhoid Mary of unhappy memory—and a well person. Like typhoid carriers and carriers of other diseases, the diphtheria carrier serves as a storehouse of those germs without being affected by them. Well-looking and actually well as he is, the diphtheria carrier is just as dangerous as a person dangerously sick with the disease. In a sense, in fact, he is more dangerous than the diphtheria patient. For parents are likely to keep their children away from somebody seriously sick with a highly contagious disease. They are not likely to keep them away from someone who appears to be the picture of health.

How many diphtheria carriers there are in Alabama or anywhere else at a given time, there is no way of knowing. But authorities estimate that about one per cent of all diphtheria patients who recover become carriers and remain dangerous from this point of view for an indefinite time.

The mechanics of the transfer of those germs is similar to that of transfers of other germs. Whenever a diphtheria patient or carrier coughs or sneezes, they are hurled into the atmosphere in the small droplets which are sprayed into the air at such a time. They may even leave the body in that way whenever the patient or carrier talks with the mouth open, although that danger is believed to be considerably less than the other one.

If those germ-laden droplets got no

farther than the surrounding atmosphere, they would be harmless. Nobody would get diphtheria. But many of them do not stay there until they die or become harmless. For we live in close physical association with others. The air one person breathes out—or coughs out, for that matter—some one else breathes in. And anyone breathing air into which someone else has recently breathed those droplets is very likely to get diphtheria infection. Unfortunately, that in-breathing does not have to be done immediately. For those droplets are light. They do not sink to the floor or pavement like a brick or piece of lead. They may be suspended at head level for some time. Anyone coming along during that time is very likely to breathe them into his own lungs. Nor does their danger end there. Even after they have had time to sink slowly to the floor or pavement, they do not always stay there. Somebody may come along and strike them with a shoe. A housemaid may stir them with a broom. Or somebody else may hurl them into the air. And that air again becomes diphtheria-dangerous.

Naturally, how close the physical association is has a great deal to do with the chance that a person will get diphtheria from being with a diphtheria patient. Those who wait on patients are more likely to get the disease than those who pass them casually on the street. Health authorities in London were greatly concerned over the dangerous potentialities of the extreme crowding that occurred in that often-blitzed city during the war. Those who had been bombed out of their own homes went to live with their more fortunate friends and relatives. In many cases, that meant doubling up in beds, in the living room and everywhere else. The London subways were turned into vast dormitories, cots and pallets being placed so close together that it was often difficult to get in and out without disturbing one's neighbors. In industrial centers, too, another kind of crowding appeared—the kind due to the rapid swelling of communities' population as workers flocked to those cities and towns to help perform the miracles of production that had to be performed to keep the armies, navies and air forces active against the enemy. That problem was not confined to England of course. We had it here in the United States, here in Alabama. To most people, this descent of workers upon cities like Montgomery, Mobile, Birming-

ham, Gadsden, Anniston and any number of others meant only a scramble for a place to live and perhaps a struggle to pay rents, which were often high in spite of rent controls. But to your doctor and the public health worker, it meant a greatly increased danger of epidemics. This danger did not apply to diphtheria alone. Those crowded conditions and that closer physical association also made people much more likely to get any number of other diseases.

You can also get diphtheria from infected milk and other products which you drink, eat or handle.

Some forms of illness tell their victims they are sick immediately after they strike. But diphtheria is not one of them. You may have it for several days without knowing there is anything wrong with you. And, what is worse, you may have it in communicable form without knowing you are not all right. When that happens, you may spend time at your job or at play that you ought to be spending in bed, under a doctor's care. And you are almost certain to be exposing others to the disease.

Another trouble about diphtheria is that, even when its symptoms appear, they are often misleading at first. It is easy to regard them as without significance altogether or as indicating some minor illness that need not be taken seriously.

The first symptom, for example, may be a feeling of fatigue. And who pays much attention to feeling tired, even when he is more tired than usual? He may have been working unusually hard. He may not have slept as well as usual the night before. And, if one develops a sore throat, as he is likely to do in early diphtheria, that may be due to a cold or to some other condition that will soon clear up without any help from a doctor. The fever is probably so slight as not to cause the victim to feel feverish. Therefore, he is hardly likely to take his temperature. Even if he should do so, who gets very much concerned over that little bit of fever?

After a few days there are stronger reasons for thinking one has diphtheria. But even they may not cause a doctor to be called. For those grayish-white patches in the throat may not mean much to a layman. And they may not be seen at all unless one examines the throat.

Even the doctor cannot be sure those grayish-white patches and the other symptoms mean diphtheria. But they almost certainly make him strongly suspicious of

this disease. To confirm his suspicions, he takes a swab of the throat. This consists of a wad of sterilized cotton wrapped around a stick and rubbed against the inside of the throat. This he packs carefully and sends to either a private laboratory (possibly his own) or one of the several public health laboratories maintained by the State Department of Health. There an expert in looking for diphtheria bacilli determines, by microscopic smear and culture, whether such bacilli are present. The physician makes his final decision, or diagnosis, after studying that report.

That laboratory diagnostic service is one of several ways in which the State Department of Health helps Alabamians protect themselves against diphtheria. Like most other of the Department's services, it is entirely free. However, you and your family may obtain the benefit of it only through your family doctor or some other physician. As already pointed out, he prepares the swab and sends it in. The laboratory report is sent to him, not to the patient. The Central Laboratory is situated in Montgomery. Branches are at Birmingham, Anniston, Decatur, Huntsville, Tuscaloosa, Dothan, Selma and Mobile.

To protect Alabamians against diphtheria—particularly young Alabamians—the State Health Department's Bureau of Laboratories also manufactures what is known as alum-precipitated toxoid. This provides immunity to the disease. Children should begin this protection in infancy and keep it up throughout life. Like the diagnostic service already mentioned, this is furnished entirely free. But, also like that diagnostic service, it is available only through a doctor. He may be your family physician or your county health officer. When it is administered by a private physician, he naturally may be expected to charge for its administration. When a county health officer or some member of his staff (such as the public health nurse) administers it, there is no charge whatsoever.

Another service you get from the Bureau of Laboratories is the furnishing of Schick test material. This, available free like the just-mentioned alum-precipitated toxoid, shows whether immunization obtained some time ago is still effective.

Still another service available from the Bureau of Laboratories is the furnishing of diphtheria antitoxin. Unlike the other, however, it is not free in most cases. It is pur-

chased in large quantities and sold at cost. In order that no one may be denied its benefits through inability to pay, there is no charge in cases of this kind. Unlike the toxoid, it is not a preventive but a cure. It is administered after a person gets diphtheria. And at such a time, hours, even minutes, count. The patient should get it without delay.

Thus diphtheria is both preventable and curable, in most cases. It is a reflection upon our intelligence and sense of responsibility that it is still attacking and killing so many people every year.

**BUREAU OF LABORATORIES**

**Thomas S. Hosty, Ph. D., Director**  
**SPECIMENS EXAMINED**

**January 1954**

Examinations for diphtheria bacilli and Vincent's .....	124
Agglutination tests .....	846
Typhoid cultures (blood, feces, urine and other) .....	491
Brucella cultures .....	21
Examinations for malaria .....	77
Examinations for intestinal parasites .....	3,954
Serologic tests for syphilis (blood and spinal fluid) .....	25,053
Darkfield examinations .....	2
Examinations for gonococci .....	1,496
Examinations for tubercle bacilli .....	2,993
Examinations for meningococci .....	0
Examinations for Negri bodies .....	130
Water examinations .....	1,558
Milk and dairy products examinations .....	5,112
Miscellaneous .....	2,551

Total 44,408

**BUREAU OF PREVENTABLE DISEASES**

**W. H. Y. Smith, M. D., Director**  
**CURRENT MORBIDITY STATISTICS**

**1953**

	Dec. '53	Jan. '54	E. E.* Jan.
Typhoid and paratyphoid fever .....	6	5	2
Undulant fever .....	3	4	2
Meningitis .....	12	10	10
Scarlet fever .....	68	47	75
Whooping cough .....	24	47	81
Diphtheria .....	21	17	29
Tetanus .....	2	6	2
Tuberculosis .....	185	179	182
Tularemia .....	0	1	1
Amebic dysentery .....	0	3	2
Malaria .....	0	2	4
Influenza .....	602	1486	771
Smallpox .....	0	0	0
Measles .....	277	573	92
Poliomyelitis .....	9	9	5
Encephalitis .....	1	1	0
Chickenpox .....	91	273	267
Typhus fever .....	0	2	8
Mumps .....	24	135	124
Cancer .....	338	458	326
Pellagra .....	0	0	1
Pneumonia .....	235	547	256
Syphilis .....	126	194	633
Chancroid .....	16	16	8
Gonorrhea .....	340	423	533
Rabies—Human cases .....	0	0	0
Positive animal heads .....	27	51	0

As reported by physicians and including deaths not reported as cases.

\*E. E.—The estimated expectancy represents the median incidence of the past nine years.

**BUREAU OF SANITATION**

**Arthur N. Beck, M. S. in S. E., Director**

**TYPHUS CONTROL PROGRAMS**

**Contributed by**

**J. P. Gilbert**

**Assistant Sanitary Engineer**

The number of reported cases of endemic typhus fever in Alabama has steadily declined from a high of 890 cases in 1944 to a low of 19 cases in 1953. During this period an intensive program was carried out for the control of rats and rat ectoparasites in an effort to break the chain of transmission of the disease from rats to humans.

In 1945, in cooperation with the U. S. Public Health Service, programs were set up in a number of counties having a past history of high typhus morbidity. The majority of the counties approved for inclusion in the program were located in the southeastern part of the state; consequently most of the control effort was concentrated in that area. The program included the treatment of rat-infested premises with 10% DDT powder for ectoparasite control and the use of various poison baits for rat control. Specimens of ectoparasites and rat bloods for laboratory analysis were collected at the beginning and during the course of treatment to determine the degree of control being obtained.

In the early stages of the typhus control program, labor, materials, equipment and transportation were furnished through the U. S. Public Health Service, with overall supervision of the program at the state level. County-wide programs were developed in the following approved counties: Coffee, Covington, Crenshaw, Dale, Geneva, Henry, Houston and Pike. In the other counties, Calhoun, Dallas, Jefferson, Mobile, Montgomery and Talladega, control work was carried on mostly in the larger cities.

As the program developed the governing bodies in the participating counties appropriated local funds to supplement the financial assistance being received. After several years of operation the counties had assumed the major portion of the cost of the control work, including labor, bait materials, and truck operation and maintenance. Assistance from the federal government then received was in the form of trucks, DDT dusting equipment, and supplies of DDT powder. At the present time four

counties, Covington, Dale, Geneva, and Houston, are operating a continuous county-wide typhus control program based on procedures initially established.

In a number of the large cities control of rats in the business area is being carried on through commercial pest control companies, with routine inspection of premises being made by the local health department personnel. In a few of the smaller towns an effort has been made to integrate a program of typhus control with a sanitary survey of premises. With information obtained from such surveys the health departments can then make specific recommendations regarding related sanitary needs, such as sewage disposal facilities, garbage disposal and livestock shelters creating a fly breeding problem, and the sanitary condition of premises contributing to mosquito breeding or affording rat harborages.

With the development during the past few years of newer and more effective insect and rodent control chemicals and the use of these materials by the people, control work has been accelerated. The widespread use of warfarin, an anticoagulant poison, has apparently been very successful in reducing rat populations to a minimum.

Although reported cases of typhus fever are now relatively few, tending to indicate that typhus fever is no longer a problem, it is recognized that a certain amount of preventive work will lessen the danger of a recurrence of typhus fever. It is also felt that any funds expended in control operations is justified alone by the economic savings realized through the prevention of damage and loss of foodstuffs caused by rats.

**Public Health and the Private Physician**—The private physician who is familiar with community public health work rarely is unwilling to support any reasonable program. He recognizes the public health physician and his staff as valuable allies and partners who are dedicated to the same good purpose to which he is dedicated, namely, the health and well being of the people. Since the days of Hippocrates, a doctor has not been influenced solely by motive of profit. Though he knows that the practice of improving or preserving community health will reduce sickness and death, he does not consider public health work as being competitive with his own job of restoring and preserving individual health. Rather than being competitive, it is complementary.—*Holle, Texas State J. Med., March 1954.*

## BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

### PROVISIONAL BIRTH AND DEATH STATISTICS FOR NOVEMBER 1953

Live Births Stillbirths and Deaths by Cause	Number Registered During November 1953			Rates* (Annual Basis)		
	Total	White	Colored	1953	1952	1951
Livebirths	6614	4062	2552	25.4	27.1	25.7
Stillbirths	155	67	88	22.9	24.6	23.8
Deaths, stillbirths ex- cluded	2281	1364	917	8.8	8.5	8.9
Infant deaths—						
under one year	228	104	124	34.5	33.3	38.8
under one month	147	74	73	21.7	11.1	24.5
<b>Cause of Death</b>						
Tuberculosis, 001-019	27	15	12	10.4	10.5	27.0
Syphilis, 020-029	6	1	5	2.3	3.5	3.1
Dysentery, 045-048					0.4	
Diphtheria, 055					1.9	2.0
Whooping cough, 056	1		1	0.4		0.4
Meningococcal infec- tions, 057	4	3	1	1.5	0.4	1.2
Poliomyelitis, 080, 081	1	1		0.4		1.2
Encephalitis, 082, 083	1	1		0.4	0.4	
Malaria, 110-117						0.4
Malignant neoplasms, 140-205	271	199	72	104.0	99.2	95.3
Diabetes mellitus, 260	40	26	14	15.3	9.3	10.6
Pellagra, 281	2	2		0.8	1.2	0.4
Vascular lesions of central nervous sys- tem, 330-334	309	164	145	118.6	111.2	116.1
Other diseases of ner- vous system and or- gans of special sense, 340-398	22	10	12	8.4	13.2	13.3
Rheumatic fever, 400-402	4	1	3	1.5	1.6	1.6
Diseases of the heart, 410-434	539	386	153	206.8		
Hypertension with heart disease, 440- 443	158	72	86	60.6	271.5	269.4
Diseases of the arte- ries, 450-456	25	19	6	9.6	9.3	11.0
Other diseases of cir- culatory system, 444-447, 460-468	31	12	19	11.9	11.7	12.2
Influenza, 480-483	21	13	8	8.1	9.7	4.3
Pneumonia, 490-493	101	48	53	38.8	30.3	26.7
Bronchitis, 500-502	9	8	1	3.4	1.9	0.4
Appendicitis, 550-553	4	1	3	1.5	1.6	1.6
Intestinal obstruction and hernia, 560- 561, 570	13	5	8	5.0	5.8	5.1
Gastro-enteritis and colitis (under 2), 571.0, 764	13	1	12	5.0	4.7	8.6
Cirrhosis of liver, 581	18	11	7	6.9	4.7	4.3
Diseases of pregnancy and childbirth, 640- 689	2	1	1	3.0	15.4	8.9
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 682, 684						1.5
Congenital malforma- tions, 750-759	30	22	8	4.5	3.2	3.8
Accidental deaths, total, 800-962	187	117	70	71.8	69.6	75.7
Motor vehicle acci- dents, 810-835, 960	86	56	30	33.0	35.7	31.4
All other defined causes	334	195	139	128.2	163.7	145.1
Ill-defined and un- known causes, 780- 793, 795	108	30	78	41.4	2.7	42.7

Rates: birth and death rates per 1,000 population; infant deaths per 1,000 live births; stillbirths per 1,000 deliveries; maternal deaths per 10,000 deliveries; deaths from specified causes per 100,000 population.

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## AMERICAN MEDICAL ASSOCIATION NEWS

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### DREAMING NORMAL UNLESS IT INTERFERES WITH YOUR SLEEP

Go ahead and dream. There's nothing abnormal about dreaming while you sleep unless it becomes so excessive that it interferes with your sleep.

Writing in the *Journal of the American Medical Association*, a medical consultant stated:

"Night dreams are normal. Dreaming may be considered a physiological safety valve and a natural process of recuperation for the psyche just as rest and relaxation serve the physical constitution.

"A function of dreams is to partially relieve psychological frustrations and tensions by means of camouflaged symbolic wish-fulfillment fantasy and to help the ego to integrate these problems so as to be able to better carry out its realistic functions.

"If dreaming becomes so excessive as to interfere with adequate sleep, however, it may be symptomatic of an anxiety neurosis or a psychoneurosis. The mental state should then be investigated, and, if it continues unrelieved, psychiatric consultation is indicated."

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### POLIO SUSCEPTIBILITY MAY BE INCREASED BY ABSENCE OF TONSILS

Removal of tonsils and adenoids may increase susceptibility to bulbar and bulbospinal forms of poliomyelitis, it was stated editorially in the April 3 *Journal of the American Medical Association*.

Further study of this problem was urged by the editorial, which stated that data have suggested: (1) that the mere absence of tonsils and adenoids, regardless of the time of their removal, leads to increased susceptibility to bulbar and bulbospinal forms of polio, and (2) that if poliomyelitis strikes within a matter of days after an operation to remove the tonsils and adenoids, there is a greater risk that the patient will have the bulbar type and a severer illness.

"The relation between tonsillectomy and poliomyelitis and between the presence or absence of tonsils and poliomyelitis has

been the subject of discussion for some years," the editorial stated.

"Data presented appear to suggest that the time when tonsillectomy is performed when related to the onset of poliomyelitis may be of less significance than the mere fact that tonsils are absent. Settlement of this aspect of the tonsil-poliomyelitis problem is of considerable importance to the entire medical world and merits further study in view of the growing belief that recent tonsillectomy may lead to increased susceptibility to the bulbar and bulbospinal forms of poliomyelitis."

Several studies on the relationship between the absence of tonsils and adenoids and the onset of bulbar poliomyelitis were reviewed in the editorial. One study described 1,947 patients, 51.9 per cent of whom had neither tonsils nor adenoids at the time the disease was contracted.

Of the patients afflicted with bulbar polio, 85.1 per cent previously had been subjected to the tonsillectomy procedure, while 68.7 per cent of the patients attacked by bulbospinal polio previously had undergone tonsillectomy. Of the patients with bulbar polio who previously had been subjected to tonsillectomy, 93.5 per cent died, as did 56.9 per cent of such patients with bulbospinal poliomyelitis.

Another study described in the editorial concerned 800 patients with polio, 500 of whom had been subjected to tonsillectomy and adenoidectomy. Of the 85 patients in whom bulbar polio developed, 85.9 per cent previously had been subjected to tonsillectomy. Bulbospinal poliomyelitis occurred five times more frequently in patients whose tonsils had been removed.

The incidence of both nonparalytic disease and spinal paralytic disease in this group of patients was higher in those without tonsils than in those with tonsils. In general, comparison of patients with tonsils and patients without showed that bulbar polio was three to four times commoner in patients subjected to tonsillectomy than in those not operated on, and that bulbospinal polio was three to five times more common in patients subjected to tonsillectomy than

in those in whom such surgery had not been performed.

A third study reviewed pointed out that of 432 patients with acute anterior polio, 61 per cent of the patients afflicted with bulbo-spinal polio had had their tonsils removed, as had 76 per cent of those afflicted with bulbar polio. Seventy-eight per cent of the patients who died had neither tonsils nor adenoids when they became ill.

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#### REST, WARM AIR PRESCRIBED AS COMMON COUGH CURE

Got a cough? If there's no major ailment behind it, the cure may be as simple as bed rest and moist air.

That's the prescription of Dr. Noah D. Fabricant, Chicago, writing in the current issue of *Today's Health* magazine, published by the American Medical Association.

"Coughing can be due to any one of a large number of affections of the respiratory tract, including the familiar head cold, sinus disease, postnasal drip, excessive talking or singing, allergy, laryngitis and bronchitis," Dr. Fabricant noted.

He said some other causes of coughing are heart disease, excessive cigarette smoking, pressure on the bronchial tree from neighboring structures, tuberculosis, cancer of the lung, tumors of the larynx, and bronchiectasis.

"Fortunately," he added, "most coughs of short duration are due to acute nasal infections which extend downward into the trachea and bronchi, giving rise to the popular saying, 'Whenever I have a cold in the head, it soon settles in my chest.'"

Treatment of a cough should take into consideration two factors—discovery of the cause and means for checking the cough, Dr. Fabricant said.

He related that bed rest in a room with moist, moderately warm atmosphere may cause a cough to subside or even disappear completely. The moist air "usually soothes the impulse to cough, whereas hot, dry air may provoke and prolong a cough," he explained.

"Continuing to be up and about," Dr. Fabricant warned, "not only prolongs the illness but broadcasts the infection to others."

And one cough—by a thoughtless person who does not cover his mouth by hand or handkerchief—can blanket the surrounding atmosphere with thousands of bacteria-laden droplets traveling at the amazing speed

of nearly 105 miles an hour, the doctor pointed out.

Dr. Fabricant wrote that "various cough preparations taken without the advice of a physician are of doubtful value in relieving a cough." He suggested that when persistent coughing occurs, one should consult the family doctor, and concluded:

"In the not-too-distant past, before the day of 'wonder drugs,' physicians treated the common cough effectively with a cough preparation, an admonishment to the patient to go to bed in a moist, moderately warm room, and occasionally a twinkling hint to indulge in a therapeutic dose of an alcoholic beverage.

"Today a younger generation of physicians is learning once again how effective such time-tested measures prove in treating simple, uncomplicated coughs. The antibiotic drugs and sulfonamides are invaluable in serious upper respiratory infections and have their rightful place in modern cough medication.

"But for the common cough, a therapeutic rifle will ordinarily suffice without resorting to a medicated atom bomb."

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#### DESCRIBE USE OF NEW MILK PROTEIN SUPPLEMENT

Successful use of a new protein supplement as an adjuvant to treatment of various types of diseases and abnormal health conditions, including those requiring low-sodium diets, was described in the April 3 *Journal of the American Medical Association*.

Called *Kralex*, the supplement is derived from skim milk and is taken orally in liquid form. It has been used to supply sufficient protein to persons suffering from heart, kidney and liver diseases, in reducing diets for obesity, to combat protein deficiency due to lack or loss of appetite, and to increase the daily protein intake of the aged and very young, the article said.

Although high in protein, *Kralex* lacks vitamins and minerals, and is not a balanced food, the article stressed. It is very palatable, and as a liquid can be flavored with fruit flavors and served hot or cold, or it may be used as a gelatin or as a base for puddings or cream soups. Because of the low initial cost of milk protein as compared with other animal protein and the simplified methods of manufacture, *Kralex* should be a relatively low cost source of protein, it added.

# THE JOURNAL

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## ACUTE APPENDICITIS

### A STUDY OF CASES BEFORE AND AFTER THE ADVENT OF CHEMOTHERAPY AND ANTIBIOTICS

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and

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The present-day popular use of antibiotics and chemotherapy for acute infections is generally considered to be an important factor in reducing the postoperative mortality rate in individuals with acute inflammation of the appendix. With this in mind, a study was made at the Lloyd Noland Hospital, Fairfield, Alabama, to compare the mortality statistics of two series of patients afflicted with acute appendicitis and operated upon at one hospital in a period before sulfonamide and antibiotic therapy with another series surgically treated after the advent of sulfonamides and antibiotics.

In 1936 Dr. R. M. Pool published a review of all of the cases of acute appendicitis operated upon at the Employees Hospital (now the Lloyd Noland Hospital), Fairfield, Alabama, from the time this institution was opened in November 1919 to September 1, 1935. In this early series before the days of sulfonamides and antibiotics, there was a total of 757 patients with acute appendicitis who received surgical intervention. This first sequence will be called Group I. As a comparison with this primary group, the present study covers a review of 722 consecutive patients with acute inflammation of the appendix operated upon during the five-year period from October 1, 1946 to October 1, 1951 at the same hospital and will

be designated Group II. In the later series, sulfonamides were used as adjunct therapy in some of the earlier patients treated, but during the last three years the specific medical therapy before or after surgical operation has included one or more of the antibiotics, especially penicillin, or penicillin and streptomycin.

In the primary series of 757 patients surgically treated before the knowledge of antibiotic therapy, there were 45 postoperative deaths, or a general operative fatality rate of 5.94 per cent. In the present consecutive series of 722 patients operated upon with acute inflammation of the appendix, and who also received adjunct antibiotic or sulfonamide therapy, there was a total of five deaths or a general operative mortality of .69 per cent. Thus, the general postoperative mortality in these cases was eight times greater before the use of antibiotics or sulfonamides.

A difference is again manifest in the surgical treatment of patients who suffered acute appendicitis with perforation. In the earlier series, 224 or 29.59 per cent of the cases showed gross perforations of the appendix, with 29 deaths or a 12.9 per cent operative fatality. In the present series, there were 144 such cases or 19.9 per cent of the whole, with only five deaths, or an operative fatality rate for the surgically treated perforated appendix cases of only 3.4 per cent. Interesting, also, is a ten per cent re-

Formerly Chief, Division of Surgery, and Chief Resident in Surgery, respectively, Lloyd Noland Hospital, Fairfield.

duction in the number of cases of perforated appendicitis as related for Group II.

In Pool's series there were 533 patients who were operated upon for acute inflammation of the appendix who did not show gross perforation. Sixteen of his reported deaths are not recorded with the cases he described as having gross appendiceal perforation. This would infer a general mortality of three per cent for his group of patients operated upon for acute inflammation of the appendix without perforation. In our present series covering the past five years, there were 578 patients who revealed either acute suppurative or acute gangrenous appendicitis without perforation at the time of operation. There were no deaths in these 578 operative cases, or a fatality rate of zero for Group II cases of appendicitis without perforation, as compared to a three per cent fatality mentioned above in Group I.

We experienced no postoperative deaths from appendicitis during the last two years of the 1946-51 series. Within this two-year period 338 consecutive patients were operated upon for acute inflammation of the appendix without a fatality. Included in these 338 cases were 64 patients having acute appendicitis with perforation.

In our recent 1946 to 1951 series, of 722 patients operated upon for acute inflammation of the appendix, the average age of all cases was 27.9 years. The youngest case was a white male, aged five months, whose appendix was removed at the time of the reduction of an ileocolic intussusception because the appendix appeared acutely inflamed. Microscopically this appendix was diagnosed as acute appendicitis. The oldest patient was also a white male, aged 86 years, who had an appendectomy for an acute appendicitis with perforation. Five hundred and eleven of the total number of cases in Group II were white patients with an age average of 28.4 years. The remaining 211 were Negroes with an age average of 27.4 years. The population from which the hospital draws its patients has a general ratio of about 57 whites to 43 Negroes. To break down further the actual hospital incidence of acute appendicitis cases in Group II, there were 344 white males whose age average was 32.4 years, 167 white females averaging 24.5 years, 149 Negro males with an average age of 32 years, and 62 colored females whose average age was 22.9 years. The above pattern reveals a striking simi-

larity and difference in the mean age in which acute appendicitis occurs in the male and in the female of either race. These figures indicate that acute inflammation of the appendix can, on the average, be expected to occur six to eight years earlier in the female than in the male in both whites and Negroes. The postoperative mortality of the white patients in Group II was one death in 511 cases or .19 per cent. There were four deaths among the remaining 211 Negro patients or a general postoperative mortality of 1.9 per cent for the colored cases. All five of these deaths occurred in male patients. There were no postoperative deaths among the 229 white and colored females in Group II.

AGE INCIDENCE AND POSTOPERATIVE FATALITY RATES OF ACUTE APPENDICITIS

Age Groups	Cases		Deaths		Fatality Rate	
	1919-35	1946-51	1919-35	1946-51	1919-35	1946-51
1-10	81—10.7%	103—14.2%	9	1	11.1%	.97%
11-20	313—41.3%	196—27.1%	7	0	2.2%	0
21-30	210—29 %	172—23.8%	12	0	5.7%	0
31-40	102—13.4%	117—16.2%	7	2	5.8%	1.7%
41-50	33—4.4%	72—9.1%	8		24.2%	0
51-60	16—2.2%	50—6.9%	2	2	12.5%	4%
61-70	2— .26%	9—1.2%	0		0	0
71-80		1— .14%				0
81-90		2— .28%				0
91-100						

Fig. 1

The Group II cases may be summarized under different pathologic classifications. Four hundred and eighty-four of the operations were for cases of acute suppurative appendicitis. The mean age of these patients was 23.3 years. They included 242 white males, 119 white females, 19 colored males, and 31 colored females. Appendectomies were performed in all of these and there were no postoperative deaths in this acute suppurative appendicitis group.

In Group II the number of appendectomy cases revealing acute gangrenous appendicitis without perforation was 94. The age average of this group was 27.9 years and included 51 white males, 22 white females, 17 colored males, and five colored females. There were also no postoperative deaths in this group of acute gangrenous appendicitis without perforation.

The patients who underwent appendectomy for acute perforated appendicitis in the 1946-51 series numbered 136 cases and their average age was 29.2 years. Forty-nine of these patients were white males; 26

GROUP II PATIENTS

Sex and Color			
	Cases	Age Average	
White			
Male	344	32.4 yrs.	
Female	167	24.5 yrs.	
Negro			
Male	149	32 yrs.	
Female	62	22.9 yrs.	
Total		Deaths	%
White	511	1	0.19
Negro	211	4	1.9

Fig. 2

MORTALITY RATE

Group	No. of Cases	Deaths	%
I	757	45	5.94
II	722	5	.69

Fig. 3

ACUTE APPENDICITIS  
WITHOUT PERFORATION

Group	No. of Cases	Deaths	%
I	533	16	3
II	578	0	0

Fig. 4

ACUTE APPENDICITIS  
WITH PERFORATION

Group	No. of Cases	Deaths	%
I	224 (29.59%)	29	12.9
II	144 (19.9%)	5	3.4

Fig. 5

RECENT PUBLISHED MORTALITY RATES

	Cases	Deaths	%
Lloyd Noland Hosp.	722	5	0.69
Univ. of Va. Hosp.	1003	8	.8
Henry Ford Hosp.	587	0	0
Roosevelt Hosp.	1481		1.6
Cincinnati Hosp.	865		3.46

Fig. 6

white females; 37 colored males; and 24 were colored females. There were two deaths in this group.

Eight patients in Group II, having acute appendicitis with perforation and abscess formation, received simple drainage of the appendiceal abscess. Their average age was 33.5 years. These cases included three white males, three colored males, and two colored females. There were three deaths in this group.

As a result of our experience in treating acute appendiceal inflammation, at the present time we advise emergency appendectomy in every case in which a diagnosis of appendicitis can be made, or is strongly suspected, with the following exceptions. The exceptions include those individuals who first present themselves 24 hours or more after the acute onset of their disease with a history strongly suggesting appendicitis, but who, on physical examination, reveal evidence of an acute fulminating general peritonitis with definite signs of general toxicity and with little or no localization of the inflammatory process. In our opinion these individuals should be put on concentrated antibiotic therapy and observed for a period with supportive measures such as intravenous fluids, decompression of the stomach with the Levine tube and Wangenstein suction; sedation, not with morphine, but with Demerol or Dolophine; and supplementary phenobarbital medication where indicated. The patient should be kept in a semi-Fowler position. If a well localized abscess forms, and persists with no evidence of recession within a selected period of observation, the abscess only should be simply drained. Later, after four to six weeks, when the acute inflammatory process has subsided, an interval appendectomy should be done. Many of these individuals will show steady progress to a full clinical resolution of their acute intra-abdominal inflammation without the necessity of draining an abdominal abscess.

Under circumstances such as the above, we have performed 30 interval appendectomies for acute appendicitis with perforation during the recent five-year period. The appendix was removed three weeks to six months after the acute onset of the disease. No postoperative fatality occurred in this group. These cases included five white males, five white females, eight colored males, and twelve colored females.

As mentioned above there was a total of five deaths in the 1946-51 series. All of these deaths occurred in patients with acute perforated appendicitis. Four of the patients were colored males and the fifth was a white male. A brief description of the patients who died will follow.

1. A colored male, aged 53 years, entered the hospital four days after the onset of his acute illness. He presented a picture of an acute surgical condition from either a per-

forated peptic ulcer or a perforated appendicitis. At operation a profound general peritonitis was disclosed. His condition was poor. A pelvic abscess was drained. He died three and one half days postoperatively. Autopsy revealed a perforated, retrocecal, acutely inflamed appendix as the etiology of his peritonitis.

2. A colored male, aged 38 years, underwent a simple drainage of a right lower quadrant abdominal abscess twelve days after onset of his illness. He died three days after operation from pulmonary embolism.

3. A colored male, aged 38 years, entered the hospital on the fourth day of his acute illness. He was thought to have an acute surgical condition from either a ruptured appendix or a perforated peptic ulcer. Operation revealed a widely disseminated, general peritonitis and an acute appendicitis with perforation. An appendectomy was performed and the abdomen was drained. The patient did not rally from the operation and died in shock five hours after the surgical intervention.

4. A nine-year-old colored male entered the hospital six days after an acute onset of lower abdominal pain and received his operation 20 days after his hospital admission, and following a large amount of antibiotic therapy. Persistent pyrexia and evidence of a pelvic mass were considered as indications for laparotomy and drainage of a pelvic abscess. At operation a small pelvic abscess surrounded with dense adhesions was found and drained. The patient died three days after the operation. Autopsy revealed multiple abdominal abscesses, a perforated appendix, and bilateral basal atelectasis of the lung.

5. A white male, aged 59 years, entered the hospital eight hours after an acute onset of lower abdominal pain, for which he had taken a laxative. At operation an acutely inflamed, gangrenous appendix with perforation was found. The appendix was removed and the abdomen was drained. This patient refused to move about or exercise in bed during his early postoperative period. He died on the ninth postoperative day from pulmonary embolism and massive pulmonary infarction.

Two of the above deaths were from pulmonary embolism. The other three deaths were the result of general peritoneal infection which was not brought under control.

We fully realize that not all of the reduction in the postoperative fatality rates described in the Group II series, as compared to the first series of Group I, is due to the use of sulfonamides or antibiotics. One must take into account the marked advances in the understanding and care of patients from a physiobiologic standpoint, together with the availability of better anesthesia administered by physician anesthesiologists as integral components in the present day treatment of surgical patients. We also take into consideration that patients are made ambulatory much more rapidly now after operation than in former times. At our institution during the past five years most of our appendicitis patients have been allowed to leave the hospital on the sixth postoperative day, compared to an average hospital stay of fifteen days for the patients in Group I. As a rule, we get these cases up within twenty-four hours after the operation. It is rare that we see any postoperative incisional herniae associated with the cases of more severe appendicitis as compared to more frequent instances of that condition in the earlier group of cases. The vast majority of our appendectomies are performed through a right gridiron incision which can be enlarged as needed. A few of the patients have had their abdomens opened through a right paramedian incision, either for easier removal of the abnormally located appendix or for an additional exploration of the abdominal cavity at the time of the appendectomy. Vitamins postoperatively, together with the discontinuance of morphine as postoperative sedation, have possibly been helpful in getting our patients back on a normal footing earlier relative to appetite and good bowel function.

In bringing about the progressive reduction of mortality statistics for appendicitis, due emphasis should also be given the effect of a cooperative endeavor by an alert, closely knit group of physicians working together for the welfare of each hospital patient.

#### SUMMARY

1. A series of 759 consecutive postoperative cases of acute appendicitis, or Group I, treated before the advent of chemotherapy and antibiotics is compared with a second similar series of 722 cases, or Group II, receiving surgical intervention at the same hospital after the appearance of chemother-

apy and antibiotics as adjuncts in the surgical treatment of acute infections.

2. The general postoperative mortality rate for acute inflammation of the appendix was eight times greater before the use of sulfonamides and antibiotics; or 5.94 per cent as against .69 per cent at present.

3. In our two series of cases the postoperative fatality rates for patients afflicted with acute appendicitis with perforation have been reduced from 12.9 per cent to 3.4 per cent. This last fatality rate should be and is being reduced still further.

4. Patients operated upon for acute appendicitis without perforation gave a three per cent postoperative fatality rate in the first series, as against a zero per cent in the second series.

5. The general postoperative mortality of the 511 white patients in Group II was .19 per cent as compared to a 1.9 per cent fatality rate of the 211 colored patients in the same group.

6. There were no postoperative deaths among all of the females, either white or colored, having operations for the various types of appendiceal inflammation studied in Group II. All of the postoperative deaths in Group II were in male patients.

7. Our figures indicate that acute inflammation of the appendix can on the average be expected to occur six to eight years earlier in the female than in the male in both whites and Negroes.

8. Age incidence of acute appendicitis and the postoperative fatality rates for each age decade are recorded and compared in the two series of cases.

9. There were no postoperative deaths from appendicitis during the last two years of the 1946-51 series. Within this two-year period 338 consecutive patients were operated upon for acute inflammation of the appendix. Sixty-four of these cases had acute appendicitis with perforation.

10. Other factors that have contributed to the reduction in postoperative fatality rates for acute appendicitis are briefly discussed.

#### ADDENDUM

From October 1, 1951 to September 30, 1953, at the Lloyd Noland Hospital, Fairfield, Alabama, 214 additional consecutive operations for acute inflammation of the appendix were performed. Two hundred and

six of these were appendectomies, and this number includes 16 interval appendectomies. The interval appendectomies were done in individuals who suffered appendicitis with perforation. In these patients the acute inflammatory process was allowed to subside under antibiotic therapy or simple drainage operation before undertaking the definitive appendectomy at a later period. Besides the 206 appendectomies mentioned above, there were eight simple drainage operations in persons with an appendiceal abscess.

In this 1951-53 series there was one death. This occurred in a colored male following an emergency appendectomy for acute appendicitis with perforation. Consequently, the overall surgical mortality for a total consecutive series of 936 operations for acute inflammation of the appendix of all varieties from 1946 to 1953 at the Lloyd Noland Hospital, Fairfield, Alabama, was six cases or 0.64 per cent. In this total series, there were 196 operations on patients having acute appendicitis with perforation. All of the six deaths occurred in this group of 196 operations. This gives a surgical mortality of 3.10 per cent for patients having acute appendicitis with perforation during this seven-year period. In the whole series 49.5 per cent of all the operations for acute appendicitis with perforation were in colored patients. Also five of the only six deaths in this whole group of cases having acute appendicitis with perforation were colored patients.

A total of 740 consecutive appendectomies for acute inflammation of the appendix without perforation was performed at the above institution between 1946-1953, with no deaths, or a zero mortality.

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Careful clinical evaluation of each person found to have suspected tuberculosis on a miniature film is of great importance in predicting the likelihood of future disability or death.—*Ames and Schuck, Am. Rev. Tuberc., July '53.*

## PLACENTA PREVIA

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The treatment of placenta previa has always occupied a prominent place in obstetrics. In 1784, Edward Rigby wrote:

"No circumstance that attends parturition exposes women to so much danger as profuse haemorrhages from the uterus towards the latter end of pregnancy, and in the time of labor; . . . an inquiry into the causes of them and an attempt to improve the practice in such cases cannot, therefore, be useless."

A century later, in 1885, Braxton Hicks said:

"The treatment of placenta previa is always a subject that it is well from time to time to discuss, in order to review the various plans suggested for its treatment under the light of increasing experience."

These statements are as true today as they were 68 years ago. I would like to review our experience in the treatment of placenta previa during the seven-year period 1946-1952. This period begins with the time of my return from military service, and it includes those cases that I actually had a part in treating.

One hundred and twenty-one patients with placenta previa were treated. These came from either the private practice of our group or were referred by their family physicians, after hemorrhage at home, or were seen in consultation with another member of the staff of the Johnston-Willis Hospital.

In each case, the diagnosis was made by palpation of the placenta through the cervix, or by determining its location at the time of cesarean section. X-ray localization has been used with some success, but we have not relied entirely upon it.

There were no maternal deaths. Twenty-two babies were lost, including neonatal deaths. This gives a fetal loss of 18.2 per cent.

It does not seem necessary to define *placenta previa* to this audience. Deventer is credited with coining the term in 1701. Various adjectives—like the familiar lateral, marginal, central, and total—have been used to describe the site of implantation of the placenta which is situated in other than

its usual location. Browne has suggested a classification of the types of placenta previa: the degree of encroachment of the placenta upon the cervix is graded from I to IV. Discarding the usual terms, central, lateral, and marginal, Greenhill and Eastman have agreed to classify the various sites of placental implantation according to the degree of impingement on the cervix, as follows: if the internal os is completely covered, the term total is used; if the internal os is partially, but not completely, covered, the term partial is employed; and, if the placenta impinges upon, but does not cover, the cervix, it is called low implantation.

For purposes of classification, the location of the placenta, in relation to the cervix, is determined at the time of the initial examination, rather than at full dilatation of the cervix. Examination of the patient with placenta previa is too dangerous a procedure to be repeated merely to classify the placental location.

We have continued to classify our cases as described by Greenhill and Eastman, though in our experience it serves no practical purpose. Whereas the low implantation type may give a false sense of security, and induce the adoption of inadequate treatment, on the other hand the total type may cause undue alarm, and impair judgment in selection of treatment method. There were in our series 69 cases of low implantation of the placenta (Browne, Type I and II); 14 cases of partial placenta previa (Browne, Type III); and 13 instances of total placenta previa (Browne, Type IV). In 25 patients the records did not describe the location of the placenta in sufficient detail to classify it.

With improvement in the treatment of all obstetric hemorrhage, and the use of antibiotics for the control of infection, there has resulted a notable change in the manner of treating placenta previa. Considerable doubt has been cast upon the formerly accepted dictum, attributed to Jaggard, that "there is no expectant treatment of placenta previa." Maternal mortality in placenta previa has been appreciably reduced during the past decade. However, the fetal results in the past have not been good. Since the

chief cause of fetal loss has been prematurity, it follows that there will be an improvement in the fetal survival rate if the patients can be carried closer to term. This procedure is justified only if there accrues no increased risk to the mother. The papers of Herman Johnson and C. H. G. Macafee served as a stimulus to revise our methods of treatment of placenta previa. Fear of the occasional massive hemorrhage has often led to immediate active steps in the treatment of the patient with painless bleeding in the third trimester. Often she is subjected to major obstetric manipulation on the assumption that the bleeding is due to placenta previa, whereas a more mature consideration of the case would lead to some other conclusion. The time gained by the adoption of this maturer policy has been utilized to obtain blood, and to replace blood loss as indicated. Therefore, a more careful study of the entire problem helps convert it to an elective procedure, rather than one of emergency.

#### THE BLEEDING

Taking up the topic of bleeding, we find that the ancients labeled this condition as one of unavoidable hemorrhage. This is an apt term, and one worth remembering.

The implantation of the ovum is ectopic, and in its development is subject to anomalies such as placenta membranacea, placenta accreta, and marginal insertion of the cord. These may be due in part to the nature of the endometrium which characterizes the lower segment of the uterus.

The maternal hemorrhage that occurs in placenta previa may be either venous or arterial in origin. If the very edge of the placenta is separated, a breach is made in the marginal sinus. The blood that is lost has already traversed the placenta. Bleeding could go on without embarrassing the fetus until the maternal blood pressure fell to such a level as to interfere with the placental circulation.

The low implantation type of placenta is an example of this mechanism. The pull of the membranes upon the thin-walled marginal sinus probably produces a break in the sinus. The efficiency of artificial rupture of membranes in controlling bleeding in this type of placenta previa may be due in part to releasing this pull, as well as the compressing action of the presenting part.

In the total type, or marginal type of placenta previa, Bartholomew believes that the

lack of the supporting effect of the uterine wall results in a vascular vacuum in the area of previa. Into this flows blood, which would, under normal conditions, pass beneath the chorionic plate. Under these circumstances there may be repeated hemorrhages of considerable size.

The lower segment is generally efficient in controlling blood loss after delivery of the placenta. For all cases of placenta previa some authors have continued to advocate packing the uterus and vagina after delivery in order to control blood loss. However, in our experience, such packing is rarely needed. For example, one patient in this series had sufficient bleeding after the placenta was delivered to cause some alarm, and she was treated by packing the uterus and vagina with gauze. When she continued to lose blood, preparation was made for hysterectomy. But when the pack was removed, the bleeding stopped, and she thereupon made a complete recovery without operation. Since that time no uterus has been packed after delivery of placenta previa, and we have had no serious postpartum hemorrhage. This raises an interesting point regarding the control of bleeding from the lower segment. The large venous sinuses communicate directly with the uterine veins, and ultimately with the vena cava. They can bleed only if the pressure in the vena cava is higher than the pressure exerted by retraction of the lower segment. The arteries in placenta previa, although opening on the surface of the lower segment, may have traversed the upper segment on their way, and they are thus compressed by the retraction of the upper segment.

#### THE DIAGNOSIS

In the diagnosis of placenta previa the characteristic sign is that of painless bleeding in the third trimester of pregnancy. All who treat the pregnant woman are familiar with this description. However, only about one in five patients who show such bleeding will ultimately prove to have placenta previa. The bleeding is often associated with faulty fetal presentation. To improve the percentage of accurate diagnoses of placenta previa we must keep it constantly in mind with all patients who show an abnormal fetal presentation near term. The incidence of transverse presentations is so high as to lead one to suspect placenta previa when this occurs.

In the patient who has noted painless

bleeding the presence of an unengaged or unstable head is enough for presumptive diagnosis of placenta previa. As Stallworthy has pointed out, the placenta—particularly if it lies on the posterior wall and encroaches upon the pelvic inlet by overlying the sacral promontory—may prevent descent of the fetal head. The descent of the head may impair the fetal circulation, especially if the insertion of the cord is low. With this in mind it is well to note the effect on the fetal heart rate when pressing the presenting part into the pelvis manually, or during uterine contraction if the patient is in labor.

Some authors have stressed the radiologic diagnosis of the location of the placenta. Since it is useful sometimes, the method should be employed when the condition of the patient permits. Pitfalls in soft tissue x-ray study have been emphasized by Chassar Moir. In some of the films the thickness of the shadow considerably exceeds that of the normal placenta. In some cases the localized thickening or the uterine wall changed when external pressure was applied. With air in the amniotic sac the uterine wall was found to be of normal thickness at the suspected site.

Dippel's experience has been that the x-ray study will be accurate in localization of the placenta in 90 per cent of the cases in which it is employed. The size and shape of the site of implantation, contrasted with the normal appearance of the remaining wall of the uterus, have served to localize the placenta. Dippel states that visualization of the entire wall above the pelvic brim is important for successful localization of the placenta.

Placentography is of value only when the patient is approaching term. The method is almost useless before the thirty-sixth week of gestation. In studying the patient suspected of having placenta previa we have been guided by our colleagues in radiology as to the choice of soft tissue versus cystogram. Sometimes the radiologist has been able to show, with a fair degree of certainty, the placental site in the uterine fundus. This has given us the necessary courage to look for a local cause of bleeding without fear of starting a profuse hemorrhage which might require delivery for its control.

When, at other times, the radiologist has not been able to show a placental site in the

fundus, cystogram is then generally indicated. Where there is an increase in the space between the presenting part and the bladder, or where there is a distortion of the bladder shadow, a presumptive diagnosis of placenta previa is made.

Stallworthy has called attention to the work in x-ray placentography of Reid at Oxford. He has emphasized the lateral view and the change in proximity of the fetal head to the sacral promontory. This is especially significant when the placenta overlies the sacral promontory, for then there is considerable distance between the head and the last lumbar vertebra.

Reid has placed metal clips on the cervix and radiographically measured the distance from cervix to sacral promontory at term. This was found to be 7 to 10 cm. in the cases studied. Marshall believes that at term the lower segment is at the level of the pelvic brim. This explains the inability to feel the placenta in some cases, for here it is out of reach of all but the most expert fingers.

X-ray visualization of the placenta by the introduction of radiopaque media into the amniotic sac, and by the injection of radiopaque media into the aorta, has been described. Neither of these techniques was used in our series. Because we have had no experience with either one we do not feel qualified to discuss them.

In our experience roentgen diagnosis has been of help in many cases. It can be employed after the initial bleeding has stopped. Valuable information and valuable time for the fetus and mother are gained before definitive treatment is begun.

The radiologic study affords an opportunity to detect major fetal anomaly, which is much higher in placenta previa than in the other pregnancies. Macafee reports 3.4 per cent of fetal monstrosity in placenta previa at Royal Maternity in Belfast; Greenhill cites 4.3 per cent at Chicago Lying-In-Hospital. These statistics are 3 to 4 times the incidence in normal deliveries.

In the presence of fetal monstrosity, there would be no indication for delay in delivery to carry the patient nearer to term. On the other hand, one could be spared the embarrassment of having unduly prolonged the pregnancy, and increased the cost and concern to the patient who is unfortunate enough to have both fetal monstrosity and placenta previa.

In the series under consideration there was no instance of this monster type. There were two fetal anomalies, not compatible with survival; one was of the cardiovascular system, the other of the brain. X-ray would not have detected them. The patients in each case began labor spontaneously, soon after the initial hemorrhage, so that no x-ray studies were made.

All but a few of the patients in this series had one or more vaginal hemorrhages either antepartum or intrapartum. In a few instances the placenta was located at the time of artificial rupture of membranes, for elective induction of labor, in patients who had no antepartum bleeding. In one case the placenta was found overlying the cervix at the time of cesarean section, which was done as an elective repeat operation. The first cesarean had been done for placenta previa.

It is our belief that any patient with a history of bleeding in the third trimester of pregnancy should be transported without examination to a hospital for care. The need for the ancillary services of the laboratory and radiology leaves no place in modern obstetrics for home treatment of placenta previa.

Johnson has emphasized that the initial hemorrhage in placenta previa is not fatal, and that if no rectal or vaginal examination be done—and, of course, no packing inserted—the bleeding will subside in 24 hours. This knowledge has given us the courage to refrain from vaginal manipulation when the patient is first admitted to the hospital. The time thus gained is used for procuring blood for transfusion. Then, if the bleeding stops—and it generally does—a more thorough study of the problem can be undertaken.

The history is significant in arriving at a correct diagnosis. An estimate of the amount of blood lost is helpful, but it is often difficult to obtain such information from a frightened patient. Generally, there is a history of painless, causeless bleeding. Sometimes labor follows, and the presence of the abdominal pain of labor may confuse the condition with premature separation of the normally implanted placenta. Parks has called attention to the bloodstained feet in the patient who has sustained a profuse hemorrhage, at least profuse enough to run down upon the floor.

The abdominal examination often reveals a malposition of the fetus, sometimes transverse, but more often either an unengaged head or an unstable head, which is significant if the patient is near term or is in labor.

The presence of the fetal heart tones will eliminate from consideration any major degree of placental separation. The possible significance of alteration of the heart rate with depression of the head into the pelvis has been mentioned earlier. Stallworthy states that in four cases his clinic has made the diagnosis of fetal distress, due to compression of the cord near the site of the previa, and has delivered live babies by immediate cesarean section. The diagnosis was confirmed at the time of operation.

The pallor of the nail beds and lips, the pulse rate, and the blood pressure help the clinician in his estimate of the general condition of the patient.

Laboratory confirmation of shock, with blood volume study or the concentration of erythrocytes, should not be necessary for the practical physician. These aids are of some value in estimating the amount of blood replacement required in profound shock.

Besides placenta previa, the differential diagnosis of bleeding in the third trimester of pregnancy will include premature separation of the normally implanted placenta, vasa previa, rupture of marginal sinus of placenta, and both malignant and benign local lesions of the cervix and vagina.

#### TREATMENT

A policy of initiating treatment by watchful waiting offers a number of definite advantages. Time and opportunity are given to the clotting and reparative processes of nature to heal the source of bleeding. Time, also, is available in which to replace by transfusion any blood loss which may have rendered the patient a poorer risk for delivery.

Furthermore, ample time is gained for more careful study of the patient's problem and for correction of coincidental complications which might compromise her condition at delivery. In the event that the fetal size and gestation period are such that fetal loss might be expected, continuation of the pregnancy offers a definite advantage for the baby.

Therefore, careful preparation and study of the case remove it from the class of an emergency procedure. Time and opportunity are afforded for optimum preparation, and for treatment under the best conditions, as an elective measure.

The elective termination of the period of observation may vary widely under different circumstances. In some instances, labor will begin and, in itself, end this period. In others, the prolongation of pregnancy may not be justified, as the fetus may be of sufficient size and nothing more is to be gained by further observation. However, some patients may have a fetus near the period of viability, in which case one or more weeks of observation may be of value. This is the type of case that raises considerable controversy on the advisability and justification of prolonging the pregnancy.

Herman Johnson, C. H. G. Macafee, and Tiffany Williams have demonstrated an improvement in fetal survival, without the concomitant increase in maternal risk. Subscribing to this principle we have followed such a practice during the past 7 years.

The case of Mrs. F. R. D., No. 32270, will illustrate some of these points. Pregnant for the second time, she had slight bleeding at 33 weeks, and a profuse hemorrhage at 35 weeks. She was brought to the hospital at once. No rectal or vaginal examination was performed. After bleeding had stopped, x-ray study was done to locate the placenta, but it was not definitely located. The baby was small. Since she lived 90 miles from Richmond arrangements were made for her to stay in the city. At the 37th week she had another slight episode of bleeding and was readmitted to the hospital. Three days later, with preparation for transfusion at hand and arrangements for either bag insertion or cesarean section ready, a vaginal examination was made. The cervix was uneffaced, and the internal os covered by placenta. Cesarean section was performed, with delivery of a 5 pound-7 ounce living child. The mother made an uneventful recovery.

Thirty-one of the patients in this series were observed for periods ranging from one day to two months, when onset of labor put an end to observation in a few cases. In three cases repeated episodes of bleeding made further observation impracticable and too risky.

Of these 31 patients, 4 lost their babies, while 27 babies left the hospital living and well. The average weight of the 27 surviving babies was 6.7 pounds. Since the average weight of the 4 who died was only 3.9 pounds, prematurity, undoubtedly, played a role in their deaths. The pregnancy in 2 of these 4 cases was terminated by spontaneous onset of labor. In one patient who had 3 profuse hemorrhages it was not considered safe to defer delivery even though the baby was small. One baby died of atelectasis on the second day.

When decision is made that observation is no longer desirable and that delivery is indicated, another chapter of divergent ideas is opened. The methods of treatment, which have run the gamut from simple blood letting to cesarean section, include the administration of ergot, packing the cervix and vagina, removal of the placenta before delivery of the baby, accouchement force and internal podalic version and extraction, Braxton Hicks bipolar version, the hydrostatic bag, scalp traction with Willett forceps, simple artificial rupture of membranes, and cesarean section. Savage gives a history of the development of each of these methods, and he mentions the status of each in modern obstetrics. An analysis of our cases shows that artificial rupture of membranes, the Voorhees bag and version, and cesarean section have been used almost exclusively when some active measure was required.

*Simple artificial rupture of membranes* is effective when the presenting part is engaged and the cervix is partially effaced and dilated 2 cm. or more. When the patient is in labor and the presenting part is at the pelvic brim, simple rupture of membranes will often allow the presenting part to descend, compress the placenta, and control bleeding.

The former practice of version and plugging the placental site was beloved by the older practitioners. Whenever it is ridiculed today, we should not forget that the reason it was favored was that it provided an effective means of controlling the bleeding. The mother's life was saved at the expense of the baby. Although this method is no longer necessary, the principle still applies that vaginal delivery is safe only if the presenting part can act as an effective hemostat. This the presenting part cannot do if it is above the pelvic brim, but it will do so if it

can be made to enter the pelvis, either by simple rupture of the membranes or by application of traction to the scalp.

Twenty-nine (23.9 per cent) of our cases were treated by simple artificial rupture of membranes, followed by either spontaneous delivery or outlet forceps extraction. Of these 29 babies, one was lost, while 28 were discharged from the hospital in good condition.

If labor does not start after simple rupture of the membranes, or the presenting part does not compress the placenta enough to control bleeding, then the Willett forceps or a similar clamp may be applied to the fetal scalp and traction applied by attaching a weight which is allowed to hang over the foot of the bed.

We used the Willett forceps for scalp traction three times. A premature labor, with the placenta located posteriorly, resulted in delivery of a small infant which died. In two cases, the clamp was used with success in the delivery of living children.

Cesarean section is now recognized as one of the more useful methods of treating placenta previa. Improvement in anesthesia and blood transfusion has played an important role in reducing the hazard of cesarean section. We are not justified in comparing the cesarean section of 1952 with that of 1932. Whitridge Williams stated that "the propriety of cesarean section for placenta previa is one which, to my mind, is very much overestimated," and he maintained that "cesarean section for practical purposes can be almost entirely dispensed with." Today these opinions have lost the force and significance they carried forty years ago. They sound a little ridiculous in the light of current obstetric practice.

Much has been said and written concerning the type of cesarean section preferable in placenta previa. It is our belief that, as in most other cesarean sections, the transverse incision of the lower segment is advisable. We have followed this idea without any cause for regret. In addition to the low incision of the uterus, the Pfannenstiel incision of the abdomen has continued to serve us well.

In general, delivery by cesarean section is best for the patient with complete placenta previa or the uneffaced cervix, and certain patients with posteriorly placed placentas in whom the presenting part is high.

There are many who say that if simple artificial rupture of membranes is not adequate then cesarean should be done. Such thinking does not appear to me to describe completely the treatment of placenta previa, but it does show that the trend in treating placenta previa is more and more toward cesarean section.

Twenty-one (17.3 per cent) patients in this group were delivered by cesarean section. One baby, when 50 hours old, died of atelectasis.

Some writers have directed much adverse criticism at the hydrostatic bag. Holding that there is no place for the Voorhees' bag in modern obstetrics, many have advocated that it be retired to the obstetric museum. On the other hand, Seely of Detroit, in reporting 250 cases of placenta previa, stated that the bag was used 105 times. He said:

"I am aware of criticism aimed at use of the bag and its many supposed disadvantages, such as predisposition to malposition, inefficiency in control of hemorrhage, infection, etc., and can only say that these have not occurred to the extent to discourage us in its continued use."

Our experience with the bag parallels that of Seely's. Since it has served us well in many instances, and has not led to any major complication, we can see no valid reason for its discard if the indications and techniques of its use are understood and followed.

The bag makes more demands upon the obstetrician than other methods of treatment, both from the exactness of its placement and the attention it requires until delivery is completed. I have preferred to place the bag extra-ovularly, having been taught by my father that the method controls bleeding better. When the bag is almost out of the cervix, preparation is made for delivery.

If the bag is allowed to drop into the vagina its value in controlling hemorrhage will be lost, unless the presenting part should replace the bag as a placental compressor. The following case report will illustrate these points.

Mrs. A. E. C., Case No. 30769, age 30, had an episode of bleeding at the 27th week of her first pregnancy. She was admitted to the hospital. Bleeding stopped with bed-rest. No vaginal examination was done. At the 35th week she was readmitted because of another episode of bleeding. X-ray

studies at this time showed the fetal head high. The placenta was not seen in the fundus uteri.

On the following day, vaginal examination showed the cervix dilated 3 cm. The placenta was felt on the posterior wall, and it overlapped the internal os by 1 cm. A Voorhees' bag was placed without rupturing membranes. Six hours later the bag was removed without deflating it. The placenta was then overlapping the cervix by 5 cm. A 6 pound, 6 ounce healthy child was delivered by version and extraction.

There was no significant bleeding during labor. She had postpartum bleeding, which was controlled by posterior pituitary extract and blood transfusion. Her recovery was afebrile.

After the bag has been removed, the method of delivery should depend upon the position of the head. If the vertex is low, simple forceps extraction may be done; if the vertex is high, internal podalic version and extraction is the method of choice; and, if the presenting part is breech, an easy and slow extraction is indicated, after bringing down the feet.

A word of caution might be added here in regard to handling the after-coming head. If, after extracting the shoulders, the body of the baby is allowed to rest on the operator's arm, with legs astride the arm, and ventral surface toward the floor, then the fetal head is guided into the pelvis with gentle suprapubic pressure. With the operator's hand in the vagina the fetal head is palpated at this point to determine if it has passed through the cervix. In the event that the cervix is still encircling the fetal head it is gently pushed over the head with the vaginal hand, while the head is steadied by the abdominal hand. After the head is out of the cervix its delivery is accomplished by simple suprapubic pressure.

In this series the Voorhees' bag was used in 17 (14.1 per cent) instances. Of the 4 fetal deaths, 2 were associated with prematurity—the first weighing 2 pounds, 6 ounces, the second 2 pounds, 10 ounces. In the third case the bag was inserted after prolapse of cord and an arm, resulting in fetal death; the placenta was felt at that time. The fourth fetus was lost when the cord prolapsed at the time of spontaneous rupture of membranes; in attempting to replace the cord the placenta was felt and a

bag inserted; the fetal heart was not heard again.

In no instance did the bag fail to control bleeding, nor did the bag produce any fetal malposition. There was no significant maternal morbidity in this group.

#### SPONTANEOUS ONSET

The remainder of patients in this series, 54 in number, fell into labor spontaneously. In itself this is another point favoring a course of watchful waiting. The delivery of this group of patients was effected as indicated by the individual case. Generally, this was done by outlet forceps or allowed to occur spontaneously.

An analysis of the method of treatment of the various types of placenta previa shows that in our series the patients were treated in the following manner:

Total placenta previa	13 cases	2 fetal deaths
Cesarean section	10	0
Bag and version	2	2
Bag and breech extraction	1	0

Partial placenta previa	14 cases	3 fetal deaths
Cesarean section	1	1
Bag and version	2	0
Bag and breech extraction	2	0
Spont. onset, breech extraction	1	0
Spont. onset, low forceps	2	0
Spont. onset, spont. delivery	4	2
Spont. onset, bag and version	1	0
Spont. onset, bag and low forceps	1	0

Low implantation placenta	69 cases	8 fetal deaths
Cesarean section	7	0
Bag and version	4	0
Bag and breech	2	1
Spont. onset, breech extraction	1	0
ARM and low forceps	24	2
Spont. onset, low forceps	12	2
Spont. onset, spont. delivery	9	2
ARM and breech extraction	1	0
ARM IPV	3	0
ARM Willett clamp	3	1
ARM Bag IPV	3	0

Type not specified	25 cases	5 fetal deaths
Cesarean section	3	0
Bag and version	1	0
Spont. onset, low forceps	13	1
Spont. onset, spont. delivery	8	4

#### SUMMARY

The patient with placenta previa should be transported to a hospital for treatment. The initial hemorrhage does not make immediate delivery mandatory. Rectal or vag-

inal examination can be safely deferred until definitive treatment can be expected to produce a living child. An important consideration is the replacement of lost blood by transfusion.

The method of delivery should depend on both the condition of the cervix and the position of the presenting part, rather than on the type of placenta previa.

Placenta previa is a major complication which merits the attention of the most experienced obstetrician available.

1. One hundred and twenty-one cases of placenta previa were treated.
2. There was a fetal loss of 18.2 per cent.
3. There were no maternal deaths.
4. The value of expectant treatment of the patient whose baby is small is emphasized.
5. Hospital care of all patients with bleeding in the third trimester of pregnancy is advisable.
6. The diagnosis and management of placenta previa are discussed.

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## PITOCIN IN LABOR

J. C. WELBURN, M. D.

HAL FERGUSON, M. D.

and

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The extract of the pituitary lobe of the hypophysis was shown by Oliver and Schaefer in 1895 to exercise a pronounced effect upon non-striated muscles when it was injected intravenously. This effect on the walls of the blood vessels caused a vasoconstriction and a marked rise in blood pressure. Dale, in 1906, first demonstrated the oxytocic action of its extract which led to its clinical use in stimulating the pregnant uterus. The third striking effect of the extract was shown by Van der Velde, in 1912, to be its capacity to inhibit the secretion of urine, that is, its antidiuretic action. Kamn and his co-workers succeeded in separating the extract into two fractions: Pitressin (vasopressin) which had the pressor and antidiuretic action and was devoid of any action on the uterus, and Pitocin (oxytocin) which manifested the oxytocic action and was relatively free of action on the blood vessels.<sup>1</sup>

Pituitary extract was first introduced into obstetrics in 1909 by Blair Bell and Hofbauer.<sup>2</sup> Following this it was frequently used for hastening labor and terminating

pregnancy, with frequent disastrous effect on both mother and baby. The full effect of this powerful uterine stimulant was either not known or was unheeded by many of its users. As the dangers of pituitrin were realized and recorded, its use became outlawed in better obstetric practices except in an occasional isolated case.

The use of posterior pituitary extract in labor prior to the birth of the child has been widely condemned by most obstetric teaching centers in the past four decades. As pointed out by Reid<sup>3</sup> in 1946, and Eastman<sup>4</sup> in 1947, this rather universal attitude resulted from unreliable standardization of the drug, its use in relatively large doses, and its indiscriminate employment in obstetric situations which would ordinarily dictate against the use of labor stimulating agents.

Since the early 1940's, Pitocin has been used more and more because it is recognized to be a more favorable drug than its predecessor, pituitrin, and, when properly used in experienced hands, is an innovation in obstetrics. Reevaluation has come about because of advances of present day obstetrics—most deliveries now occur in hospitals, the use of the x-ray in the evaluation of dystocia patients, antibiotics, chemotherapeutic agents, and supportive measures

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Presented at a meeting of the Alabama Association of Obstetricians and Gynecologists, Birmingham, November 12, 1953.

From the Department of Obstetrics and Gynecology, Lloyd Noland Hospital.

1. Cushny's Pharmacology & Therapeutics, ed. 13, Grollman and Slaughter, p. 531.

2. Theobald, G. W., et al.: Brit. M. J. 2: 123, 1948.

3. Reid, D. E.: Am. J. Obst. & Gynec. 52: 719, 1946.

4. Eastman, N. J.: Am. J. Obst. & Gynec. 53: 432, 1947.

such as intravenous fluids, along with available blood for hemorrhage and shock.

In a review of the literature of the past few years, it is found that Pitocin is chiefly used in uterine inertia and for induction of labor. The mode of administration has been by three different routes. Hofbauer<sup>5</sup> suggested the use of intranasal pituitrin by means of cotton pledgets soaked with the drug and inserted into the patient's nares. This method has not had widespread use because of the variation in the rate of absorption in different individuals. The most popular method of administration has been the intramuscular injection of minute quantities (0.5 mm. to 3.0 mm.) at 15 minute or more intervals. The amount of the drug in the blood stream cannot be definitely regulated, consequently the outcome is unpredictable and patients also object to repeated injections. Theobald,<sup>2</sup> in Great Britain, and Hellman<sup>6</sup> and Stone<sup>7</sup> in this country were the first to use the dilute intravenous method of administration. It was their conclusion that by this method the contractility pattern of the uterus was more effective and thus good results better assured when it was used intravenously.

The discussion of the use of Pitocin in labor is limited in this presentation to its use before delivery of the fetus. Its use in the third stage of labor will not be considered.

In the past 4 years and 10 months (January 1, 1949, through October 31, 1953), we have used Pitocin at the Lloyd Noland Hospital in 86 cases: in 35 patients to induce labor, in 23 with primary uterine inertia, and in 28 with secondary uterine inertia.

The indications for inducing labor in the 35 patients are listed in the following table:

	No. Cases
Systemic disease (hypertensive cardiovascular disease, diabetes, etc.)	10
Severe toxemia	7
Premature separation of placenta	5
Marginal placenta previa	5
Ruptured membranes without labor	4
Eclampsia	2
Postmaturity	1
Habitual intra-uterine fetal death	1
Elective induction for convenience of patient and/or physician	0

Many of the above patients had more than one of the indications present. The ages ranged from 18 to 45 years, with an average of 29.9. There were 6 primiparae and 29 multiparae, the greatest parity being 9. Nineteen patients were at term and sixteen were premature.

In the intravenous drip method we used 1 cc. of Pitocin to 1,000 cc. of 5% glucose in distilled water. The rate of flow of the solution is adjusted to give regular uterine contractions of good quality at two to three minute intervals. The uterus must relax between contractions, and it is imperative that a physician be in attendance when the intravenous solution of Pitocin is started and at frequent intervals as long as the patient is given this solution. No patient has been given more than 2 Pitocin clyses in twenty-four hours, usually with a rest between them.

In 31 of these patients Pitocin was administered by intravenous drip. Twenty patients delivered during the first clysis. Fifteen of these were at term, whereas only three of the eleven patients receiving multiple clyses were at term and eight were premature. The most given to one patient were five 1,000 cc. clyses over a five-day period with no appreciable progress with the first four clyses and a one hour and fifty-three minute labor with the fifth.

Four patients received fractional doses of Pitocin intramuscularly. It is our practice to start with an initial dose of 1 mm. and increase this by 1 mm. every fifteen minutes until an effective response is obtained, and the dose which gives an effective response is not exceeded at any subsequent injection. As a further safeguard in the administration of the drug intramuscularly, we use it only in a 1/4 cc. syringe. Thus, if a mistake is made in the amount of Pitocin given, the patient cannot get more than 1/4 cc. at any injection.

The smallest amount administered was 2 mm. repeated in fifteen minutes and this patient delivered in 54 minutes. The largest amount was five doses of 2 mm. each at 30 minute intervals and this patient had a total labor of twenty-three hours.

The average duration of labor for the entire group of patients was six hours and seven minutes.

Four patients failed to go into labor from the use of Pitocin alone. Three of these de-

5. Hofbauer, J. I.: J. A. M. A. 89: 24, 1927.  
6. Hellman, L. M.: Am. J. Obst. & Gynec. 57: 364, 1949.  
7. Stone, M. L.: Am. J. Obst. & Gynec. 59: 49, 1950.

livered after a catheter and pack were inserted into the uterus and vagina and the Pitocin clysis was repeated. The fourth patient was successfully induced with an intravenous drip of Pitocin after amniotomy.

Parity of the patient seemed to be of less significance than the duration of the pregnancy in determining the success of the induction. Two of the failures were multiparae and two were primiparae, but three of the patients were premature and one patient was at term.

These 35 patients delivered 27 living infants, 19 being term births and 8 prematures. The 8 fetal deaths were all premature infants. Four deaths were antepartum, 2 intrapartum—both anencephalic monsters—and 2 neonatal due to congenital atelectasis. In no case was death attributed in any way to Pitocin.

Before leaving induction of labor, I would like to quote Dr. Deickmann<sup>8</sup>: "The primary indication for induction of labor must always be: Is the patient better off with her uterus empty, or if the infant is alive and in good condition, are its chances of survival increased by early delivery?" We have not used Pitocin in the so-called "appointment obstetrics."

In the uterine inertia group we have used Pitocin in 51 patients. We have employed Eastman's<sup>4</sup> definition of primary uterine inertia, which is "labor characterized from the onset by feeble contractions of short duration occurring at long intervals, and resulting in undue delay in progressive dilatation of the cervix." In this group we have used Pitocin in 23 cases without any failures.

In the 23 cases classified in the primary uterine inertia group the ages ranged from 18 to 40 years, with an average of 28.0. There were 9 primiparas and 14 multiparous patients. Four patients had ruptured membranes and 19 had unruptured membranes. The average time of observation in the hospital prior to Pitocin stimulation was 16 hours and 42 minutes, with the shortest observation being 3 hours and the longest 48 hours. Many of these patients with long ineffective labors had periods of rest by heavy sedation and general supportive measures.

Labor was stimulated in 21 patients by use of intravenous drip, 19 receiving only one clysis each, while two received multiple clyses. One patient received 4 Pitocin clyses over a 48-hour period. She was a 32 year old multiparous white at term (baby weighed 8 pounds, 15 ounces) who had given birth to 4 previous term infants spontaneously. The other patient received 3 Pitocin clyses in a 40-hour period and she was a 31 year old multiparous white who had given birth to 3 previous term infants spontaneously. This baby weighed 7 pounds. No explanation can be given for the necessity of multiple clyses in these patients.

Labor was stimulated by use of fractional doses of Pitocin intramuscularly in 2 patients. One patient, a primipara at term, received 6 doses of 2 mm. each at 2-hour intervals and she had a 36-hour labor. The other patient, a multipara at term, received 1 mm. doses intramuscularly at 30 minute intervals for 4 doses. She had a two-hour labor.

The average length of labor was 4 hours and 55 minutes. There were 26 term, healthy babies delivered, one premature (38 weeks), and 1 stillborn (intrapartum death from prolapsed cord prior to Pitocin stimulation). In no case were there any injuries of either mother or baby attributed to Pitocin stimulation.

We administered Pitocin to 28 patients with secondary uterine inertia, again using Eastman's<sup>4</sup> classification: "a labor which began in a typical manner with promise of an ordinary speedy termination, but which, without appreciable cause, came to an apparent standstill with contractions coming less frequently and intensely. At the same time the cervix, which was becoming obliterated and dilated in a satisfactory manner, ceased to make further progress."

In the 28 cases classified in the secondary inertia group, we had no failures. The ages of this group ranged from 20 to 43 years with an average of 29.1. There were 4 primiparas and 24 multiparas. Five patients had ruptured membranes on admission to the hospital, and membranes were unruptured in the other 23 patients. After admission to the hospital the shortest labor prior to Pitocin stimulation was 2 hours and the longest 36 hours, with an average of 21 hours. Fractional doses of intramuscular Pitocin were used in 27 patients, with the smallest dose being 1 mm. and the largest 8 mm., divided

8. Deickmann, W. J.: J. A. M. A. 120: 590, 1942.

into 3 doses at 15 minute intervals. Intravenous drip administration was used in one patient. The shortest labor after Pitocin stimulation was 9 minutes and the longest 1 hour and 14 minutes, with an average of 27 minutes. Outlet forceps were used on two patients, and 21 were spontaneous deliveries. There were 27 term births and one premature. There were no stillborns but there was one neonatal death. Autopsy revealed hemorrhage of both adrenal glands. This patient was a 38-year-old grand multipara with ruptured membranes and history of 24 hours of labor prior to admission. On admission the cervix was 2 cm. dilated, and after 4 hours of observation she was put up for delivery and found to have only the rim of the cervix remaining. She received 2 doses of Pitocin, 1½ mm. each at 9 minute intervals, and delivered 14 minutes later. In retrospect there is questionable indication for its use in this patient. Other than this there were no injuries of either mother or baby that could be attributed to Pitocin stimulation.

There were no maternal complications from the use of Pitocin in these 86 patients. By carefully following the methods outlined, there has been no tetanic uterine response that required anesthesia for relaxation. There were no ruptured uteri, lacerations of cervix, or postpartum hemorrhages, and all deliveries have been spontaneous or by low forceps and there have been no retained placentae in any patient receiving Pitocin prior to delivery of the baby.

We feel, by our experience, the prerequisites for use of Pitocin in inducing or stimulating labor are:

1. Adequate pelvis.
2. There must be a clear indication for its use.
3. Physician in constant attendance.
4. Uterus must be hypo- or normo-tonic and not hypertonic.
5. Patient must not be severely anemic or hemorrhaging or in shock.
6. Ether available to relax uterine spasm.
7. Patient must be in hospital where facilities are available for any emergency that might arise.

Contraindications to use of Pitocin are:

1. Cephalopelvic disproportion.
2. Scar in uterus from cesarean section, hysterotomy, or intramural myomectomy.
3. In presence of shock.
4. Simply to speed up a slow but otherwise normally progressing labor.

During the past four years and ten months we have had 6,985 deliveries at the Lloyd Noland Hospital. There were 68 patients delivered by cesarean section and 38 by internal podalic version and breech extraction. This gives an incidence of 0.97% for cesarean section and 0.53% for version and extraction. During this same period we have used Pitocin to stimulate or induce labor in 86 patients for an incidence of 1.25%. These figures emphasize that our conservatism is not limited to the use of Pitocin alone.

#### SUMMARY

In 6,985 deliveries over the past four years and ten months we have used Pitocin in 86 cases without any accidents in the mother and only one neonatal fetal death that could possibly be attributed to Pitocin stimulation.

The methods for administration of Pitocin have been discussed and the prerequisites and contraindications for its safe use have been emphasized.

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**Alcoholism and Personality Disorders**—Alcoholism and personality disorders are believed to be causative factors in chronic relapsing pancreatitis, a serious inflammation of the pancreas, it was reported in the Archives of Internal Medicine, published by the American Medical Association.

Twenty-eight cases of chronic relapsing pancreatitis observed during a three-year period were described by Dr. Arthur M. Phillips, Providence, R. I. Nineteen (68 per cent) of the patients were chronic alcoholics, and in many the onset of the attacks promptly followed the intake of alcohol, he said. Of the nine patients not classified as chronic alcoholics, four admitted to drinking in moderation. In addition, there was a high incidence of personality disorders in the group.

The patients, all men, ranged in age from 27 to 74 years, with the majority of cases (71.5 per cent) occurring in the age group of 30 to 50 years, Dr. Phillips stated. Symptoms, which varied in duration from nine hours to 22 years, included upper abdominal pains, nausea, vomiting, weight loss, and diarrhea. The frequency of attacks ranged from daily to less than one a year, with most of the patients noting three to four attacks a year.

Treatment of chronic relapsing pancreatitis, according to Dr. Phillips, can be divided into medical and surgical methods. Medical measures are concerned with the management of the acute attack, an attempt to replace any deficient pancreatic secretions, an effort to eliminate any known cause for the attacks, and drug therapy. Surgical measures are indicated for treatment of many of the complications of the inflammatory processes, he added.

**A Community's Health**—All public health problems are the direct result of a community's way of life, and any solution to these problems must include community action to succeed, it was stated editorially in the April 24th Journal of the American Medical Association.

"To attempt to set a goal for community health without understanding the behavior patterns of the groups involved is to be unrealistic," the editorial pointed out.

"Efforts at health education centered in schools or industrial plants may be useful, but only when they send a person back to his family prepared to adjust differences in concepts of the requirements for health and to be a health organizer in his family. If the person is not so prepared, the cost in tension and frustration can outweigh any advantage gained.

"Public health is not found in the health department but in the mental attitudes, customs, and sets of values of the people. People need to be concerned rather with their community as a whole than with public health. A need to dominate, a wish to monopolize the spotlight to the point of excluding others from participation, and a firm belief in one's own omniscience are attitudes that defeat the purpose of promoting public health.

"No community is perfect with regard to its health, and none is completely negligent of it, but each community's reaction to its health needs is varied and variable. It is less important to know how good the health of a community is than to know why it is at its present level.

"A community's reaction to its own level of health depends on (1) its concept of the meaning of health, (2) its concept of the importance of health in relation to other values, (3) the extent of effective communication between public health personnel and the section of the community they wish to reach, (4) how realistic the health plans are, and (5) the extent of participation of private (as distinct from governmental) health agencies, because the former can work with a freer hand.

"Health is not to be found apart from the general welfare of the individual or the community."

The editorial described an experiment in community health education in Montana, in which community self-study programs were employed with the aid of community groups and individual citizens. The results were a common awareness of community needs, intelligent planning, and community acceptance of a sound program under which health problems were alleviated.

"No one claims that community self-study programs are a panacea for all community ills, but they do cultivate a united community spirit that greatly facilitates the solution of many problems," the editorial concluded.

**Care For Your Hands**—A fortune teller may "read" your future in the lines of your hands. But, you hold your future in your own hands.

An important key to man's cultural development, your hands participate virtually every waking minute, not alone in actions but in expressing emotions and attitudes, according to Dr.

Carl J. Potthoff, Rochester, Minn. So care for your hands, and don't ignore what seems to be a simple injury.

"Long accustomed to our hands, we seldom appreciate the complexity and coordination in such 'simple' acts as turning pages, counting change and tying shoelaces," Dr. Potthoff wrote in *Today's Health* magazine, published by the American Medical Association.

"Much of living involves finger activity. Accordingly, even though these digits are small, injuries to them should receive the best of care at once."

Dr. Potthoff outlined four paramount first aid suggestions to assure proper protection of the hands when finger and thumb injuries occur:

1. Have all possible fractures x-rayed. Injuries that cause swelling at a joint, so common in athletics and manual work, are often fractures. Untreated, they may result in deformity, permanent enlargement at the joint and occasionally joint fixation.

2. Do not apply a strong antiseptic to digit wounds, lest destruction or damage of tendons and nerves occur. If medical care is soon available, apply only a sterile dressing. If considerable delay will occur and specific medical advice cannot be obtained, place the finger under the tap and permit water to run gently over the cut; then apply a sterile dressing.

3. With either wounds or possible fractures, the fingers should not be moved. An immobilization device may not be needed, but, if used, it is usually best to immobilize the finger without changing its position. Place a large wad of cloth in the palm and apply a bandage loosely over the entire hand.

4. Unless sutured, a severed finger or thumb tendon will not grow together. Thus the function—flexion, extension, spreading or approximating of the digit—will be lost permanently. With delay in securing surgical correction, the tendon ends retract farther and farther from the site of the wound, especially with muscular action in the palm and wrist. Good first aid and early surgical attention are needed.

**Cat Scratch Disease**—One hundred sixty cases of cat scratch disease, a relatively new clinical entity which may resemble other serious diseases, were reported in the *Journal of the American Medical Association* for April 10th.

The majority of the patients afflicted with the condition had had some contact with cats and were in the younger age groups, according to Drs. Worth B. Daniels and Frank G. MacMurray, Washington.

Many of the patients had skin lesions that persisted from two weeks to two years, the doctors stated. Some of the lesions became as large as golf balls, and 80 per cent of the patients had such general symptoms of infection as chills, headache, generalized aching, weakness, nausea, abdominal pains and fever.

The doctors pointed out that in many of the cases cat scratch disease mimicked such diseases as infectious mononucleosis, tuberculosis, tularemia, malignant tumors, and infected cysts.

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## THE MONTH IN WASHINGTON

These spring days are growing into weeks that really count in Congress. Unless a bill deals with an emergency, it had better be well on its way through committees by now or its chances of enactment will fade rapidly as summer approaches.

For good or evil, a large amount of health legislation is well advanced, and if Congress holds to an average pace several bills affecting the medical profession are likely to become law in the next month or so. Here is the situation in brief:

**Medical Deductions.** Legislation to increase the amount deducted from taxable income for medical expenses is a part of the omnibus tax revision bill which cleared the House early and by a wide margin, but ran into some delay on the Senate side. This bill, with the medical deduction liberalization intact, should reach the White House in plenty of time.

**Hill-Burton Expansion.** A move to make important changes in this bill developed in the Senate Labor and Welfare Committee, after the House had passed its version with some amendments. The American Hospital Association proposed that the rather complicated House legislation be scrapped, and instead that the Hill-Burton Act be amended to (a) include rehabilitation centers and nursing homes, and (b) place a high priority on hospitals for the chronically ill. The AHA idea immediately attracted support in and out of the committee. The new approach suggested by the American Hospital Association meant inevitable, but probably not fatal, delays.

**Reinsurance.** This proposal, once hailed as the keystone of the Eisenhower administration's health program, continued to encounter opposition. At one stage, of all the national associations to testify on reinsurance only the American Hospital Association was giving it unqualified support. The American Medical Association, the U. S. Chamber of Commerce, and national spokesmen for the insurance industry took about the same position: 1. Reinsurance alone cannot make uninsurable risks insurable. 2. The threat of federal control of medicine is inherent in any program that would bring the federal government in such close contact with medical practice. Dr. David B. Allman, representing the American Medical Association at the House hear-

ings, emphasized that the Association would welcome and cooperate in any movement carrying real promise of promoting voluntary health insurance.

*Health Grants.* This is an administration plan to do away with the present categorical grants for identified projects, such as venereal disease control, and to substitute funds earmarked for three general purposes: (a) to maintain present programs, (b) to initiate new programs or to expand existing ones, and (c) to finance public or private experimental or pilot programs of national or regional significance. In both committees the question was whether to group the first and second type grants together, with the state health authorities deciding how to divide up the federal money among old and new projects. Funds for the third type grant—experimental—would be completely controlled by the surgeon general. One suggestion is to require approval of the state health officer for any experimental (type three) grant in his state. Another is to eliminate the third type grants altogether, letting the National Institutes of Health handle public health as well as other medical research grants.

*Social Security.* The American Medical Association, the American Dental Association and a number of other national groups are fighting vigorously to prevent compulsory extension of Old Age and Survivors Insurance to physicians, dentists and most other self-employed. Instead, they want the privilege of deferring income tax payments on that part of earnings placed in restricted annuities—the Jenkins-Keogh plan. The American Medical Association also feels that there is no need for the bill's provision that pension rights be frozen during periods when the worker has been medically determined to be disabled. A better suggestion, the Association maintains, is to base pension rates on the ten best working years, thus virtually eliminating the need for the controversial medical examinations. Prospects are good that social security will be extended, either with or without these changes.

*Vocational Rehabilitation.* Generally, Senate witnesses favor the administration's proposal to expand the federal-state programs, providing U. S. grants are not cut. However, with no House bill introduced as of this writing, there is some doubt that, even if the Senate clears the measure, the House can find time to deal with it.

*Doctor Draft Amendment.* This bill, an outgrowth of the Peress case, swept through the Senate without objection. It may be law by the time this is published. It would amend the Doctor Draft act to permit the services to keep on duty as an enlisted man, assigned to professional tasks, anyone called under the Doctor Draft act whose loyalty is questioned. The Defense Department has promised to investigate such cases immediately, so that the man can be cleared promptly and offered a commission or discharged. The discharge would state that action was taken on loyalty grounds.

### ACCREDITATION OF HOSPITALS

The Joint Commission on Accreditation of Hospitals has released its annual list of fully and provisionally accredited hospitals in the United States, its possessions, and in Canada.

The Commission gave full accreditation to 2,920 hospitals and provisional accreditation to 498, a total of 3,418. There are about 7,500 hospitals.

The list is the first published by the Joint Commission since it took over the actual hospital surveyal work from the American College of Surgeons January 1, 1953. The Commission is supported by the American College of Physicians, the American College of Surgeons, the American Hospital Association, the American Medical Association and the Canadian Medical Association. The director is Dr. Edwin L. Crosby. Headquarters are in Chicago.

In a statement accompanying the list, Dr. Crosby said:

"The Joint Commission is a voluntary effort by our leading health organizations to improve the standards of hospital care through a system of self-evaluation.

"The Commission applies certain basic principles of organization and administration for efficient care of the patient, promotes high quality of medical and hospital care in all its aspects in order to give patients the greatest benefits that medical science has to offer, and promotes the maintenance of essential diagnostic and therapeutic services in the hospital through coordinated effort of the organized medical staff and the governing board of the hospital."

The accreditation program was started in 1919 by the College of Surgeons and was taken over by the Joint Commission as a cooperative effort last year. The 1953 list of accredited hospitals includes, as well as those actually surveyed by the Commission

staff during the year, other hospitals which were not surveyed during 1953 but which were approved by the College of Surgeons as of December 31, 1952. Mental hospitals were surveyed by the Central Inspection Board of the American Psychiatric Association and accredited by the Commission in cooperation with the American Psychiatric Association.

Dr. Crosby said that before a hospital is surveyed for accreditation the hospital must itself request such action. Hospitals under 25 beds are not eligible for accreditation. He pointed out that it had not been possible to visit all hospitals which requested accreditation during the year. There is no charge to the hospital for the accrediting service, the cost being borne by the participating organizations. The program costs about \$500,000 annually.

Before a hospital can be accredited, the Commission must determine that, among other things, it has a safe and adequate physical plant, with special concern as to fire hazards; that its governing board is properly organized and assumes final responsibility for all aspects of the hospital operation; that its medical staff is organized properly and through regular medical staff meetings reviews the clinical work in the hospital; that all tissue removed at operation is reviewed regularly to determine the adequacy and justification of the surgical work in the hospital; that adequate medical records are made promptly and preserved.

Full accreditation means that a hospital meets the required standards of the Commission. Provisional accreditation means that the hospital fell just short. Such hospitals are resurveyed within one year to determine if they have corrected the deficiencies shown in the original survey.

Dr. Crosby said, "A certificate of accreditation given to a hospital proves that it has voluntarily met the standards of the Commission which are designed to insure the public of the best possible hospital care. It means that the hospital is a safe place, and that the medical staff itself reviews the work of its members to guarantee that the patients are getting good care."

Fully accredited hospitals in Alabama are:

*Birmingham:* Birmingham Baptist, Carraway Methodist, Children's, Crippled Children's Clinic and Hospital, East End Memorial, Jefferson-Hill-

man, Jefferson Tuberculosis Sanatorium, and St. Vincent's.

*Dothan:* Frasier-Ellis.

*Fairfield:* Lloyd Noland.

*Fayette:* McNease-Robertson Clinic and Hospital.

*Gadsden:* Holy Name of Jesus.

*Mobile:* Blessed Martin de Porres, City, Mobile Infirmary, and Providence.

*Montgomery:* St. Margaret's.

*Sylacauga:* Drummond-Fraser.

*Talladega:* Citizens' Hospital.

*Tuscaloosa:* Druid City.

*Tuskegee:* John A. Andrew Memorial.

*University:* University Hospital.

Provisionally accredited are:

*Anniston:* Anniston Memorial.

*Bessemer:* Bessemer General.

*Birmingham:* South Highlands Infirmary.

*Decatur:* Decatur General.

*Dothan:* Moody Hospital.

*Florence:* Eliza Coffee Memorial.

*Gadsden:* Baptist Memorial.

*Huntsville:* Huntsville Hospital.

*Langdale:* George H. Lanier Memorial.

*Montgomery:* Professional Center.

*Opp:* Mizell Memorial.

*Phenix City:* Homer D. Cobb Memorial.

*Selma:* Vaughan Memorial.

*Sylacauga:* Sylacauga Hospital.

#### BLUE CROSS-BLUE SHIELD EDUCATIONAL CAMPAIGN

Blue Cross and Blue Shield Plans across the nation have instituted their first country-wide program of public education, using space in three widely-read magazines to explain their unique qualities in the field of prepayment health care.

It was pointed out by Frank E. Smith, Director of the Blue Shield Commission, that Blue Shield is a unique organization. "The 77 Blue Shield Plans throughout the country and its territories are endorsed by medical societies in their respective localities. Each of them attempts to meet the medical needs in the area it serves," Smith said.

Richard M. Jones, Director of the Blue Cross Commission, had this to say when asked why the 84 Blue Cross Plans had agreed to embark on the national educational program: "Blue Cross Plans are agencies of the nation's community hospitals. We are the only Plan for health care with that distinction. We're proud of that, and we think the public needs to know that,

when they enroll in Blue Cross, they will receive benefits that hospitals themselves render through formal agreements with 6,000 hospitals in the United States and Canada."

Although Blue Cross and Blue Shield will have individual campaigns, there will be cross references in each message to the other service.

The need for bringing the Blue Cross and Blue Shield stories to the American public in some continuing, coordinated way has become increasingly evident. Imitators of the now famous Plans are confusing the public. "To be imitated is a sign of superiority, but when imitations begin to confuse and misdirect, then clarification is necessary," said Smith.

It was explained that Blue Cross and Blue Shield were organized primarily as community services and not as commercial ventures, and that they are dedicated to serving the American people and fulfilling a social purpose. The programs of national education will attempt to point this out.

Blue Cross Plans protect 46 million individuals and Blue Shield now covers 29 million people.

"A fortress of conviction can be built in readers' minds to help them properly evaluate the welter of promises being made today in the hospital and medical protection marketplace," Jones said. Space in national publications gives Blue Cross and Blue Shield the latitude necessary for their stories, as well as affording the Plans the most effective and practical way to educate their present members and prospective members. Logically, if members really understand what their membership means, they will make a greater effort to retain it. At a cost far less than that offered by any other method, the new means of education will contact these members regularly in their homes. Wives as well as husbands will be exposed to the meaning of belonging to Blue Cross and Blue Shield.

Through their choice of media, Blue Cross and Blue Shield will speak to a large and significant audience. In combination, *Life*, *Look*, and the *Post* will reach about 60 per cent of the executive group in America, the proprietors of businesses, professional men and top-level executives. They also will reach about 60 per cent of the white collar group, salesmen, and people in clerical and

office jobs. They will reach 35 per cent of craftsmen, foremen, machine operators and non-farm laborers. Thirty-five per cent of service workers and 32 per cent of farmers and farm laborers will also be reached. No other combination of national publications could offer this range.

While the practicality of Blue Cross and Blue Shield needs public telling, it needs no further proving. The record of service speaks for itself. Last year, the 84 Blue Cross Plans and the 77 Blue Shield Plans provided over 925 million dollars in benefits. And all this was handled locally on each Plan's level. Both organizations, though they are nationwide, are associations of autonomous Plans sponsored in the areas served by the citizens, the hospitals, and doctors. Each Plan exists only for the benefit of the people in its own area. Dues and benefits are determined locally to fit local needs and conditions. All money paid in by those who belong to a Plan, except for the small amount needed for administrative expense, is set aside to pay for care.

Blue Cross and Blue Shield have a magnificent story to tell the American public; a story of typical American growth in a voluntary, community enterprise. In April millions who have Blue Cross and Blue Shield, and millions who have merely heard of the organizations began to get the first-hand story of the two Plans.

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**Diet and Delusions**—Correction of a deficient diet may cure the delusion of being parasitized by insects, it was reported in the May 1 Journal of the American Medical Association.

Four cases in which patients described bizarre habits of fictional parasites upon their bodies were discussed by Dr. Irma Aleshire, Iowa City, Iowa. All the patients suffered from pellagra, a deficiency disease, and all were cured of their delusions after institution of a proper, antipellagrous diet.

According to Dr. Aleshire, the patients believed the imaginary insects to cause burning, crawling, itching sensations to their skin. In attempts to alleviate the sensations, the patients scratched themselves until their skin bled, or dug small holes in their skin with their fingernails. They also washed their clothing and bedclothing daily, bathed themselves frequently, and applied various anti-insecticidal preparations to their bodies.

"It is significant that a history of poor eating habits was elicited on questioning the only patients with delusions of parasitosis whom I have seen in the past 11 years, and that correction of their eating habits cured their affliction," Dr. Aleshire stated.

## THE ASSOCIATION FORUM

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

### NO COMMENT

W. A. Dozier, Jr.

Director of Public Relations

No comment will be made on the following article which appeared recently in a local newspaper. It was titled "Common-sense Needed In Problem of Medical Service" and was written by George E. Sokolsky. This reproduction is made for several purposes, most of which are self-evident; but the most important reason is to show those complacent persons, public relations-wise that is, that many of the complaints which have been reported to them are still being voiced. Reproduction here does not mean that everything said is accepted as "gospel"; it merely shows that no "ghost has been laid." Following is the article as it appeared in the March 3, 1954, issue of the *Alabama Journal*.

"I heard a story the other day of two young people about to have their first child. The family doctor in their community rejects bringing babies into the world, insisting on an obstetrician. This is, to me, astonishing, for babies have come into life, lo! these thousands of years, with or without the aid of doctors, midwives or medicine men. It used to be the pride of the fine, old American doctor that all the young people in the community and their children were the products of his skill.

"However, we live in an age of specialization in which the mechanic who turns a screw does not use a chisel, so these young things were sent off to the obstetrician, who is nowadays a specialist in what used to be called midwifery. There were no complications in the case, except the fee asked, which was \$750, including prior and after treatment. The young people were bankrupted by their first child.

"Maybe this sort of thing is unusual. I have no way of knowing. That it is anti-social is obvious because our society cannot be strong if birth is limited by the cost of doctors. It is also a very bad thing for the medical profession, which nowadays has become suspected not of fee-splitting but of charging too much, of involving patients in

the expense of multiple specialists, of operative costs which may not be necessary. The public criticism may be all wrong, but the doctors have not succeeded in establishing their case.

"I have become interested in two illnesses, diabetes and hyperinsulinism, which I pursue in the professional literature as well as in the news. I find that too often the general practitioner rarely has knowledge of hyperinsulinism, making no tests for it and telling the patient that he finds nothing wrong, but in the end the patient takes an overdose of sleeping pills out of sheer fatigue. I find, by talking to patients, that too few dentists realize the real dangers of pyorrhea and dislike sending patients to periodontists. I note the literature on the subject and find that reconstructive dentistry is a science that only the rich and poor can afford; the poor in the clinics, the rich by paying the enormous costs.

"Nevertheless, it is true that if a person can afford a combination of periodontist, an oral surgeon and a reconstructive dentist, he is likely to keep his teeth most of his life. If all of us knew about it, whom to go to, and could afford to pay the costs, we probably would never have to use upper and lower plates, which are a curse and an abomination.

"The point of the matter is that much that is published in medical and dental journals does not find its way to the people in language which they can understand and that often physicians and dentists are too busy grabbing for a livelihood to keep up-to-date, with the result that unless the patient is sent to the specialist, he does not get the best advice and the best treatment. The specialist costs too much, even if he cures; the patient does not have the money to pay but is too well off to be accepted at a clinic. The various health insurance devices do not solve this problem because the amounts allowed for doctors or hospitals are inadequate and the patient may not have the money to make up the difference. Also, some companies cancel health insurance policies when the insured need their services. This is morally wrong if legally right.

"The solution, of course, is for hospitals to employ staffs of physicians, specialists and dentists of the highest fitness for the services of whom the patient can pay a single fee to the hospital. This is violently opposed by the various associations as unethical corporate practice. The motivation for the opposition is financial. After all, many of the most important medical institutions in this country, including the Mayo Clinic, do operate that way without being unethical.

"The doctors have to recognize that every human being is interested in his own health and while no one expects doctors to work for too little, doctors cannot afford to out-price their services beyond the ability of most of the people to pay."

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**Atomic Radiation and Pregnancy**—Radiation from the atomic bomb explosion over Nagasaki, Japan, in 1945 had considerable effect on the outcome of pregnancies of women in the city who were pregnant at the time.

Among 30 pregnant women with major signs of radiation injury, there were three miscarriages, four stillbirths, three babies who died within the first month of life, three infants who died within the first year of life, and one who died at two and one-half years. Four of the surviving 16 children were mentally retarded.

Drs. James N. Yamazaki, Stanley W. Wright and Phyllis M. Wright, Los Angeles, found this evidence in a study of pregnant women exposed to the atomic blast at Nagasaki and their offspring. Their report appears in the *American Journal of Diseases of Children*, published by the American Medical Association.

The pregnant women studied were divided into two groups—98 who were within the radiation area, 30 of whom showed what the physicians termed major radiation injury signs, and a control group of 113 pregnant women who were outside the radiation area of the city at the time of the bombing.

The over-all morbidity and mortality of the outcome of pregnancy among the 30 women who suffered major radiation injury signs was approximately 60 per cent, as compared to 10 per cent among the 68 other pregnant women within the radiation area, and about six per cent among the 113 women outside the radiation area, the doctors stated.

In the group of 68 women who were within the radiation area but sustained no major signs of radiation injury, there was one miscarriage, two stillbirths, three babies who died within the first month of life, and one case of mental retardation.

In the control group of 113 pregnant women outside the radiation area, there were two miscarriages, one stillbirth, one baby who died within the first month of life, and three infants who died within the first year of life.

In addition, the study disclosed that children

born to mothers with major signs of radiation injury were retarded in growth and development, the doctors stated. These children were significantly smaller in height and head circumference than those children born to mothers in the control group.

"It is difficult to evaluate the effect of radiation on this mortality and morbidity, since other factors, such as trauma, burns, infections, etc., may have a deleterious effect on the fetus," the doctors stated. "The evidence strongly suggests, however, that radiation, either directly to the fetus or indirectly as a result of its effect on the maternal tissues, was of considerable importance in determining the outcome of these pregnancies."

The physicians are associated with the Laboratories of the Atomic Bomb Casualty Commission, Hiroshima, Japan, and the Department of Pediatrics, University of California Medical Center.

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**That "Spring Cold"**—That "spring cold" you may be suffering from may not be a cold at all—it may be asthma or hay fever resulting from an allergy.

"If your complaint is sniffing and sneezing and a stuffy nose, there are about seven or eight million others like you," according to Dr. Samuel M. Feinberg, Chicago, chief of the allergy clinic, Northwestern University. "Most of the sneezers are seasonal hay fever victims, but almost a million of them have a chronic nasal allergy."

Any of a variety of things might cause a person's nose to be stuffy or runny out of season or give a non-seasonal asthma, Dr. Feinberg wrote in *Today's Health* magazine, published by the American Medical Association. These include pollen, house dust, feathers, animal hair, and food.

It is common for nose allergy and asthma to occur in the same people, and they tend to occur in members of the same family, Dr. Feinberg said, adding:

"Seasonal hay fever and asthma are as changeable as the color of the chameleon. When it is sunny, hot and windy, pollen production is at its height, and your suffering severe. When it's cloudy, cool and quiet, or when it rains, pollen is at low ebb and you may feel that your malady has been cured. In some people, rainy and cool weather will aggravate the symptoms, particularly asthma."

Pollen and molds are the commonest causes of hay fever and asthma, hence the diseases are often seasonal, Dr. Feinberg pointed out. The major cause of hay fever is ragweed, but it also may be caused by tumbleweed, fire bush, sage, hemp, pigweed, timothy, bluegrass and other grasses.

The type of allergy most often mistaken for a "spring cold" is that caused by the pollen of such trees as maple, elm, poplar, birch, ash, oak and others whose pollen usually is prevalent in April and May. The molds that cause hay fever are those found on such grains as wheat, corn and oats, and on grasses.

If a person's allergy and exposure are moderate, he is in "allergic balance" and may have no symptoms, Dr. Feinberg stated.

## TRANSACTIONS OF THE ASSOCIATION

### 1954 SESSION

#### PART I

#### TRANSACTIONS OF THE ANNUAL SESSION OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA HELD AT MOBILE, APRIL 15-17, 1954

##### First Day, Thursday, April 15

The Medical Association of the State of Alabama convened in annual session in the Ballroom of the Admiral Semmes Hotel, Mobile, and was called to order at 9:00 A. M. by the President, Dr. J. O. Morgan of Gadsden.

Invocation was offered by Rev. Eugene Peacock, St. Francis Street Methodist Church, Mobile.

Addresses of welcome were delivered by Dr. Vaun Adams, President of the Mobile County Medical Society, host of the Association, and Hon. Henry R. Luscher, Mayor-President of the City of Mobile. Mr. Luscher's address was as follows:

*Mr. President and Members of the Association.*

This is much to my liking; this opportunity to welcome you people of the medical profession to our city.

I can think of no group of people more deserving of a warm and hospitable welcome than you who carry on through the days and nights the greatest of humanitarian services to your fellow-man.

It is my hope that while you are with us you will be able to obtain the well deserved rest and relaxation that is certainly due you. I hope that our city and its surroundings will be at their attractive best during your stay with us.

When I told my wife about this meeting, she began to muse about the problems of a doctor's wife. That is usually the reaction from most of our lady-folks. They invariably direct their sympathy to the wives of you men who at best can never lie down at night with the assurance that for the next several hours you can enjoy the comforts of your home and bed.

For this reason, those of us engaged in other work and professions owe you quite a debt of gratitude. Being a mayor, or a lawyer, or a merchant does have its way of taking us away from what we would like to be doing many times, but we can always say to the little woman, "Suppose you had married a doctor?"

Honored guests, you have come to a city of the Deep South that boasts many, many traditions that form the foundation and crossbeams

of a wonderful way of life, and I am happy to say that among these traditions is that of a great appreciation of medical science and everything one associates with this field of endeavor.

I dare say that in Mobile you will be quite pleased with the advancements made in hospitalization, when you discover that nothing is wanting in the modern hospitals that serve the people of this great area.

Yes, our people have the reputation of doing first things first, such as hunting and fishing, of remaining a part of the lingering atmosphere of Old World customs which have found their way into this port city over the past 250 years, and of preserving the antiquity of our architecture and home decor—but in hospitalization we have forged ahead as a trail-blazer in modern efficiency.

I would also briefly call to your attention that Mobile is not only the Mother of Mystics, her Mardi Gras title, but she is the Grandma of medical education in the state of Alabama.

It was here that the first medical college of our state was instituted, and here it was abandoned because an unwise state policy did not support it as it should. But it laid the foundation for other such institutions to be born within our state, and we are proud of the great medical center at Birmingham, because it is the fulfillment of an early dream of our ancestors. We are proud, too, that Mobile is the birthplace of the renowned General William Gorgas, who is immortal in your profession as one who symbolizes the highest performance of duty.

I want you to be aware of these matters concerning our city's traditions, because it will give you a far better appreciation of our people, a knowledge that in Mobile you will find a responsive audience to all that you are planning to do to further the great work of your profession.

Now speaking of the medical profession as a whole, I find myself pitifully lacking and oftentimes bewildered at what you are doing continuously to improve the record of mortality in our nation.

From what I read, one doesn't have to remain on the outside and just watch the statistics keep moving upwards to a higher age bracket because of your efforts, because, as a matter of fact, the reports that we read from day to day show what progress is being made by medical science.

I have noticed the many announcements concerning new drugs and medicines that may truly be termed miracle drugs. It is amazing how your tireless research and investigation into the causes of disease have borne fruit in the preservation of human life.

And, now, to my greater astonishment, I have read how work is being done to even substitute some of our vital organs and do a complete over-

hauling job on us just like our marine workers here in Mobile do on the great vessels that come here for repair work.

It is truly a bright outlook for members of the younger generation when they hear of these many, many things that are being done—new scientific improvements that will give them unheard of advantages as they go through the remaining years of their lives.

Getting off the scientific thinking that has somehow enveloped me like the ether of an operating room, I want to remind you doctors that you are only to spend a minimum of your time in exploring the scientific side of our city, its hospitals, blood center, and the like, because primarily your opportunities here lie in the direction of recreation.

I advise that you get all of your business settled up with greatest speed, and then spend your time in our flower gardens, our water resorts and fishing camps, and in those many different sports that will help you break away from the routine of your pressing service to your patients.

I hope that you enjoy yourselves immensely while you are with us. Our city is at your service now, and when you next come to see us. Thank you.

Reports of committees were called for by President Morgan, each, in its turn, being referred to the State Board of Censors.

## COMMITTEE REPORTS

### *Medical Service and Public Relations*

At the time of the annual session last year this Committee was primarily concerned with the approaching legislative session. The concerted efforts of the Committee were expended on this problem throughout the meeting of the Legislature. Immediately following the last annual meeting of the Association the Public Relations Director made another visit to all County Medical Societies. By the opening of the Legislature it was felt that our plans were well laid. The division of responsibility for watching legislative moves was made along the same lines used two years previously. Drs. Cannon and Gill maintained liaison with the Legislature while Mr. Dozier served as primary contact with the profession.

The Committee must pause here to pay tribute to a number of physicians and to express again the appreciation that the profession extends these men. Dr. Tinsley R. Harrison and Dr. Douglas L. Cannon, after a "dress rehearsal" for the State Board of Censors, appeared in behalf of the profession before a joint meeting of the Senate and House Committees on Public Health. Their presentation of our opposition to H. 311 was masterful, as some two hundred physicians who were in attendance can attest. Those physicians who left their busy practices to serve, if they were needed, as special consultants at the hearing warrant a warm appreciation, as do the others who attended the meeting to lend support to those speaking. To contact men in each of the

County Medical Societies goes our gratitude. Everyone who was requested to assume a responsibility responded quickly and fully. To each and all this Committee expresses the heartfelt thanks of Alabama physicians.

Each member of the Association knows the outcome of our legislative stand. Most of them do not know, however, that the fight continued through the last possible minute when a favorable report could have come from either of the Health Committees. For us and our stand the margin for error was nil; but because of vigilance and constant effort, we emerged from this fight in a better position than we did two years ago. The bill to change the Medical Practice Act was not reported out by either the House or Senate Committee; two years previously it was.

One thing that was learned last summer is the fact that there is little or no information available on the quality of training received in chiropractic schools. Because of this the Alabama Delegates to the American Medical Association introduced a resolution in the A. M. A. House of Delegates in December. This resolution was adopted and instructs the Board of Trustees of the American Medical Association to institute means to procure accurate and concrete evidence on the quantity and quality of training received in chiropractic and naturopathic schools and to make this information available to State Medical Associations not later than January 1, 1955. It is hoped that this will bring results.

Last year it was reported that a radio series entitled "Your Physician Speaks" was being prepared. This series of thirteen programs, each fifteen minutes in length and giving in layman's language authentic information on medical subjects, was made available to radio stations by the local County Medical Societies. With the exception of one or two instances the use of this series is completed. Forty-four stations played the series, and the response has been good. A questionnaire was sent to key radio station personnel requesting information on response to and possible weaknesses in the programs. The answers have been heartening. Most stations reported listener response, all of which was favorable. In only one instance did a station report that the series did not seem "to jell" with its audience. Most of the remarks ran from "This program was highly received in this area by our listeners" to "I think it was the greatest public service feature we have ever used." The Committee wishes to thank the physicians who gave of their time and knowledge, thus making the series possible as well as successful. These were: H. S. Banton, Ruth Berrey, T. M. Boulware, J. A. Brantley, J. M. Chenault, H. D. Coe, Jr., S. H. Darden, Jr., Luther Davis, Jr., A. S. Dix, J. O. Finney, J. R. Garber, E. G. Givhan, Tinsley R. Harrison, H. V. Herndon, H. L. Holley, J. P. Jones, Kellie N. Joseph, F. A. Kay, J. S. McLester, J. Michaelson, Maxwell Moody, Jr., J. E. Moss, Kermit Pitt, G. O. Segrest, and L. S. Smelo.

The Committee has concerned itself with the program of the American Medical Education Foundation but the response in Alabama has not been too good. During 1953 thirty contributors from Alabama gave \$2,625.50. Of this amount

the physicians contributed \$1,570.00; Southern Medical Association gave \$1,000.00, and the rest came from Woman's Auxiliaries and their members. If one looks at Alabama in comparison with other states, it is found that there were eight states with fewer contributors and eighteen with a smaller amount contributed. If Southern Medical's gift be discounted, there were only twelve states contributing less than did Alabama. Percentage-wise, nationally, 8.89 per cent of the physicians contributed; only 1.30 per cent in Alabama gave. The National Fund for American Medical Education, which concerns itself with seeking contributions from industry, reports that in 1953 Alabama industries contributed \$3,600.00. This Committee feels that during the coming year every County Medical Society should concern itself with helping this Committee to reach each practicing physician and to convince him of the need for contributing to the Foundation.

This Committee has continued to work with the American Medical Association in relation to national legislation. Drs. B. W. McNease, Chairman, A. C. Gipson, and H. L. Holley form the Committee on Veteran's Medical Affairs. The stand of the American Medical Association on non-service-connected disabilities has been reported to you. This Committee wishes to reiterate that the fundamental issue is not the matter of possible infringements on the present law but instead it is a moral issue of the correctness or incorrectness of non-service-connected disability benefits.

For the national legislative program, we are set up along the same lines used for the State Legislature. The following physicians have assumed the responsibilities of contact men: First District, Dr. A. S. Dix; Second District, Dr. J. H. Colley; Third District, Dr. H. S. Banton, Jr.; Fourth District, Dr. W. H. Sellers; Fifth District, Dr. J. T. Sheppard; Sixth District, Dr. T. J. Anderson; Seventh District, Dr. T. J. Payne; Eighth District, Dr. Julian Hodges; and Ninth District, Dr. J. M. Donald.

Within the last few weeks the Committee has instituted a Physician Placement Service which is basically an information service. Attempts are being made to gather information on towns seeking a physician so that in turn it may be made available to physicians who are looking for a location. The Committee feels that this service can fulfill a real function and can be more than mere "window dressing." As with any other project, it must crawl before it can walk; but it is hoped that the next few months can bring concrete results, both to the people of our state and to the profession.

Last year this Committee recommended that the thirty-year rule on payment of dues be abolished. Because of the ever expanding work of the Association the Committee again recommends that the rule which allows a practicing physician to be exempted from payment of dues after being a member of the Association for thirty years be abolished.

Two projects of the Alabama Academy of General Practice have been brought to the attention of the Committee, and services of our office have

been made available for them. Dr. J. Paul Jones, Camden, is chairman of a committee on preceptorships. A voluntary preceptor plan is being prepared by Dr. Jones' committee, the Medical College's administrators and the students. This program, if brought to fruition, could be of future value to the whole profession. Dr. W. P. Baston, Moundville, is chairman of a committee which has begun study and work on means of more properly handling the problem of medical care for indigents. We have offered our services for this project.

The Committee feels that the medical profession has been adequately indoctrinated and the time is at hand when more emphasis should be placed on programs designed primarily for the public. It is further felt that the logical approach is through County Medical Societies. The problem evolves itself into motivating the respective Societies to take advantage of their opportunities. With this thought in mind it is planned to expend much of our time and energy in this direction during the coming months. The Committee also plans to prepare an exhibit for the Alabama State Fair in Birmingham this fall.

The usual daily, weekly, and monthly activities of the Public Relations Office have continued. Evidences of these are seen by all, and they need no listing here. Besides speaking and representing the Association at various functions, the Director has attended two American Medical Association meetings, and an American Medical Education Foundation meeting. Also, his services have been used by several specialty groups; among these are the Alabama Academy of General Practice, the Alabama Chapter of the International College of Surgeons, the Southeastern Surgical Congress, the Alabama Pediatric Society, and the Alabama Association of Obstetricians and Gynecologists.

Following are an expenditure report for 1953, a proposed budget for 1954, and a surplus account as of December 31, 1953.

FINANCIAL STATEMENT

	Expenditures 1-1-53 to 12-31-53		Proposed Budget for 1954	
Salaries				
Director .....	\$6,600.00		\$ 7,200.00	
Clerical Assistance .....	2,700.00	\$ 9,300.00	4,000.00	\$11,200.00
Travel				
Committee .....			150.00	
Director .....	2,719.99	2,719.99	2,500.00	2,650.00
Printing				
Health Column .....	241.02		250.00	
Lit. & Bulletins .....	1,458.90	1,699.92	50.00	300.00
Office Equipment .....		78.57		400.00
Office Rent .....		960.00		960.00
Stationery and Supplies .....		1,011.89		1,200.00
Telephone and Telegraph .....		452.37		500.00
Radio .....		335.85		25.00
Postage .....		1,043.12		1,450.00
Art .....		10.00		100.00
Library .....		170.13		75.00
Miscellaneous .....		199.15		240.00
		\$17,980.99		\$19,100.00

SURPLUS ACCOUNT AS OF DECEMBER 31, 1953

	Yearly Appropriation and Expenditures	Yearly Surplus
Original Grant .....	\$ 5,000.00	
Expenditures 4-1-47 to 12-31-47 .....	\$ 365.88	
Expenditures 12-31-47 to 6-30-48 .....	286.69	
Expenditures 7-1-48 to 3-31-49 .....	1,327.76	
Expenditures 4-1-49 to 3-31-50 .....	1,296.99	
Expenditures 4-1-50 to 3-31-51 .....	261.00	
Expenditures 4-1-51 to 3-31-52 .....	653.05	
Expenditures 4-1-52 to 12-31-52 .....	32.97	
Expenditures 1-1-53 to 12-31-53 .....	78.57	\$ 4,302.91
1948 Appropriation .....	\$14,484.50	
Expenditures less office equipment 7-1-48 to 3-31-49 .....	8,541.22	5,943.28
1949 Appropriation .....	15,555.00	
Expenditures less office equipment 4-1-49 to 3-31-50 .....	14,782.24	772.76
1950 Appropriation .....	16,597.50	
Expenditures less office equipment 4-1-50 to 3-31-51 .....	13,383.31	3,214.19
1951 Appropriation .....	16,965.00	
Expenditures less office equipment and legal fees 4-1-51 to 3-31-52 .....	14,702.19	
Legal fees .....	3,000.00	—737.19
1952 Appropriation .....	18,045.00	
Expenditures less office equipment 4-1-52 to 12-31-52 .....	11,562.29	6,482.71
1953 Appropriation .....	18,742.50	
Expenditures less office equipment 1-1-53 to 12-31-53 .....	17,902.42	840.08
		<u>\$17,212.92</u>

The Committee wishes to thank all those who have helped to make the past year a successful and productive one. Since the profession is faced with expanding problems which must be met, this Committee solicits the active support of every member of this Association.

J. O. Finney, <i>Chairman</i>	J. G. Daves A. C. Gipson
J. P. Chapman	<i>Ex Officio</i>
J. Paul Jones	J. O. Morgan
E. L. Gibson	Douglas L. Cannon
Joe H. Little	D. G. Gill
H. L. Holley	Mrs. J. P. Howell
H. G. Hodo, Jr.	

At the conclusion of the report of the Committee on Medical Service and Public Relations, Mr. Hiram Jones, Chicago, Executive Secretary of the American Medical Education Foundation, acquainted the Association with the aims and objects of the Foundation.

Maternal and Child Health

Your Committee has completed the 1952 Maternal Mortality Survey in Alabama and publication of the report has been effectuated.

Organized antenatal clinics for indigent patients are still lacking in many Alabama counties.

Postgraduate instruction efforts in obstetrics have been minimal in number.

Provisional vital statistics for 1953 indicate a tentative maternal mortality rate of 1.40 per 1000 live births (white 0.6 and Negro 2.65). This rate compares favorably with the 1952 rate of 1.64. Unofficial analysis of 115 maternal death certificates show the following:

1. Hemorrhage 30%.
2. Toxemia 29%.
3. Infection 7%.
4. Non-maternal 6%.

The increasing incidence of cesarean section means more later uterine ruptures. This year there were 4 fatal post-cesarean section ruptures with subsequent pregnancy. Those who cite the maternal safety of cesarean section should consider this. A section case is truly an "obstetric cripple."

Diagnostic errors caused 4 deaths from ruptured ectopic pregnancies.

Midwives made their usual contribution to maternal death rates. All such deaths this year were the result of the complete inability of the midwife to cope with postpartum hemorrhage.

Realizing the high premature death rate in Alabama, Dr. Dan Sullivan of Mobile, President of the Alabama Pediatric Society, has appointed a committee to propose methods and procedures to improve premature care. It is expected that this committee will cooperate with the Association's Committee on Maternal and Child Health in arriving at recommendations.

After 18 years intermittent service on this Committee your present chairman retires this year. He truly appreciates the cooperative assistance of Alabama physicians and hospitals with past efforts of this Committee and requests the same loyal assistance for his successor.

T. M. Boulware  
*Chairman*  
Hughes Kennedy  
T. C. King

Cancer Control

Cancer is second only to cardiovascular diseases in the cause of deaths in the state of Alabama.

It is true that we do not know the cause of cancer, but we do know that one-half of the cancer deaths that occur in Alabama can be prevented or certainly postponed if diagnosis and treatment are carried out early.

Our slogan should be: Every Doctor's Office A Cancer Detection Clinic. If every doctor's office is alert and is cancer conscious, early diagnosis will be established much oftener.

EDUCATION

By very intensive education of physicians in the early diagnosis and treatment of cancer, we can decrease the death rate by one-half.

The most encouraging statistics that we have seen in the past few years are those put out by

the Metropolitan Life Insurance Company showing there has been a decrease of 12.6 per cent in the cancer death rate among women in the last decade. This represents a saving of approximately 10,000 lives per year as a result of either better treatment, earlier diagnosis, or, probably, a combination of the two.

The Journal of the Medical Association of the State of Alabama devotes one issue to cancer and in this issue there are usually four to six excellent papers. This has been done for the past several years and over this period of time there have appeared many excellent papers discussing the various phases of cancer, particularly the more common types, and their treatment. During the remainder of the year the Journal is quite active in having editorials, abstracts and other papers pertaining to the general subject of cancer.

The State Health Department has been sending to the profession and is continuing to send a publication entitled *The Cancer Bulletin*. This bulletin is edited in Houston, Texas and on its staff and editorial board are leading cancer specialists throughout the country. Through the years this publication has brought to the physicians of Alabama various phases of cancer, not only diagnosis and treatment, but some of the research that is being devoted to cancer at this time. I strongly urge that the members of the Association keep these bulletins and refer to them, and, if possible, have them bound for they contain a world of excellent material.

This year, under the sponsorship of the Alabama Division of the American Cancer Society, the Jefferson County Medical Society, the State Medical Association, and the Seventh District Dental Society of the Alabama Dental Association, a cancer seminar was conducted in Birmingham on January 27-28. This seminar was an outstanding postgraduate course. The following men and their discussions appeared on the program:

Frank Kanthak, Atlanta, Ga.: The Role of the Dentist in the Early Recognition of Oral Cancer.

Michael R. Deddish, New York: The Use of the Proctoscope in the Detection of Cancer.

Ross Golden, New York: The Detection of Gastrointestinal Neoplasms.

John A. Wall, Houston, Texas: The Detection of Early Carcinoma in the Female Genital Tract.

William W. Scott, Baltimore, Md.: The Evaluation of Present Day Diagnosis and Treatment of Prostatic Cancer.

Frank E. Adair, New York: Fibrocystic Disease of the Breast as an Obstacle to the Early Detection of Breast Cancer.

William Boyd, University of British Columbia, Vancouver, Canada: Some Thoughts on Carcinogenesis.

John R. Schenken, Omaha, Neb.: Neoplastic Diseases in Childhood.

Richard H. Overholt, Brookline, Mass.: The Early Detection of Cancer of the Lung.

Richard L. Sutton, Kansas City, Mo.: The Early Stages, Recognition, and Treatment of Cancer of the Skin.

Those men who attended the seminar were well repaid for their efforts and time and it is regrettable that more of the men throughout the state were not able to hear these outstanding speakers.

It was through the untiring work of Mrs. Lillian G. Meade and her workers of the American Cancer Society, Alabama Division, in cooperation with the physicians of Alabama, particularly those of Jefferson County, who made this seminar possible. We are certainly indebted to the workers of these groups for such an outstanding seminar and we do hope that in the next few years we will be able to have another one.

#### CLINICS

There are six state-aid clinics operating in Alabama: two in Birmingham, two in Montgomery, and two in Mobile. These clinics handled 986 new patients in 1953 as compared with 1045 in 1952.

For those who are not familiar with the state-aid clinics, we will make a few general remarks. They are for charity patients who have early and possibly curable cancer. The patient should be seen first by the family physician who sends a requisition to the local Welfare Department for clearance to be sure he is indigent. The Welfare Department forwards the requisition to the State Health Department for approval. If there are sufficient funds and if it is felt the patient has a chance of being cured, he is referred to one of the six clinics throughout the state. The clinics are completely charity and no one receives remuneration for his service. Small fees are allowed for various services and a small hospital fee is allowed. None of these fees is sufficient to take care of the actual cost, so the clinics and the hospital participating actually are aiding in the over-all cancer program.

After a patient has been sent to a tumor clinic he is seen by men on various services, and if the diagnosis of cancer is established and if it is felt that the case is possibly curable, then he is admitted to a hospital for necessary treatment. After he has had necessary treatment he is sent back to his home and family physician who should follow the patient until he is seen again at the clinic. These patients are asked to return to the clinic at stated intervals in order that their progress may be followed.

It may be interesting to break down the location of the cancers: buccal cavity and pharynx 59; digestive tract and peritoneum 57; respiratory tract 18; breast 91; cervix 189; vulva 9; vagina 7; uterus 8; parametria 1; endometrium 11 (combining uterus, parametria and endometrium, a total 20 carcinomas of the uterus); ovary 6; placenta 1; penis 3; testicle 1; prostate 10; urinary organs 13; skin 142; brain and nervous system 2; lymphatic and hematopoietic system 9; and unspecified sites 26. There were 324 patients referred to the clinics who were diagnosed as non-malignant. There were 221 white males, 365 white females, 81 colored males, and 318 col-

ored females. There were 97 deaths reported from tumor clinic patients in 1953. (The average length of hospital stay per patient was 9.4 days. This figure was for October, November, December 1953.)

One can see that the state cannot treat all worthy cancer cases, but one can see there is very definite effort being made to treat the most likely curable ones.

Within the past year the state has increased its field of activity, including selective lung cancers, brain cancer, selected skin cancer, and some of the lymphoid malignancies. These cases have to be screened closely.

There are no available means of caring for terminal and far advanced cancer patients at this time. (Through the cooperation of the American Cancer Society, Alabama Division, dressings may be obtained for cancer clinic patients, and drugs for relief of pain, not to exceed \$1.00 per day. Some help is also given for transportation of these patients to and from state-aid clinics. In special cases there has been some additional allowance but this is certainly not customary.) Too many far advanced cancer patients are being sent to the clinics. The referring physicians will aid greatly in screening these patients well before sending them to a clinic. Only early and possibly curable patients can be handled by state clinics, and if the clinics are cluttered up with terminal, hopeless cases, some of the other patients will suffer for lack of attention. Patients coming to state-aid clinics should be proved cancer patients or certainly strongly suspected of having cancer.

The methods for diagnosing cancer have changed very little in the past year. A detailed history is essential, and a thorough physical examination probably can be carried out in any doctor's office which will diagnose the majority or at least give strong suspicion of cancer. Special studies, such as radiologic, bronchoscopic, and proctoscopic, are necessary in a fair number of cases after a thorough history and physical have been done. Cytology studies seem to be much more helpful than they were a few years ago; and with more trained personnel, this phase of diagnosis probably holds a considerable amount of aid for the physician. Biopsy is still our best and most reliable method of diagnosing cancer. There are no definite cancer tests as one has for syphilis and some of the other diseases. There is a considerable amount of work being done along this line but none of these tests is completely reliable at the present time.

The treatment of cancer has not changed markedly in the past year. Surgery, x-ray and radium are still the only proven methods of curing cancer. Hormones in the case of carcinoma of the prostate and metastatic carcinoma of the breast are very useful and often prolong and make life much more comfortable but they have not proved to be cures. Nitrogen mustard and some of the other chemicals have been most useful in lymphoid neoplasms, particularly Hodgkin's disease. The isotopes have been somewhat disappointing. Their chief usefulness has been in the field of diagnosis rather than treat-

ment. They are quite useful in research, and apparently their use in research and diagnosis will be more advantageous than in therapy.

#### AMERICAN CANCER SOCIETY

The American Cancer Society, Alabama Division, under the able leadership of Mrs. Lillian G. Meade is doing an outstanding job in lay education, as well as in cooperating with physicians throughout the state. As mentioned in the early part of this report, the cancer seminar held in Birmingham January 27-28 was made possible largely through the untiring effort of Mrs. Meade and her staff of the American Cancer Society and through the cooperation of physicians, particularly those in Birmingham.

The American Cancer Society, Alabama Division, has a large number of movies available to physicians throughout the state. Some of these are for lay audiences, some for professional audiences. Anyone interested may write the American Cancer Society, Alabama Division, 907 Ramsay-McCormack Building, Birmingham 8.

As mentioned previously, the chief purposes of the American Cancer Society are, first, education both lay and professional; second, research and, third, service. Mrs. Meade will probably give you more detail as to this phase of the American Cancer Society's program, particularly in regard to research being done in Alabama.

During the seminar held in Birmingham, groups from the Alabama Health Department, state-aid tumor clinics, American Cancer Society, Welfare Department, and representatives from the Cancer Committee of the State Medical Association met for a luncheon. It was hoped that by getting these groups together a better correlation could be attained between the various organizations working in the common fight against cancer. There were a number of problems discussed, particularly the relationship of the Welfare Department with the Health Department in state-aid clinics. It was hoped that a better screening of patients could be developed.

#### RECOMMENDATIONS

We strongly urge that the educational program as carried on by the State Health Department be continued and strengthened by any way possible.

When one looks over the statistics and sees that 30 per cent of patients with cancer of the uterus are being cured whereas 80 per cent should be if diagnosed and treated early, 35 per cent cancer of the breast being cured whereas 70 per cent should be if diagnosed and treated early, and 15 per cent cancer of the rectum cured whereas 75 per cent should be if treated early, improvement may certainly be looked for. These are only a few examples of the importance of early treatment. We should all strive to have our patients treated as early as possible until more specific curative treatments can be established for cancer.

We suggest that the Health Department continue publishing as many articles on cancer as possible emphasizing the early diagnostic signs of cancer. We strongly urge physicians throughout the state to read the Cancer Bulletin and

keep it as a reference book. There are a number of cancer manuals and probably in the next few years one of the newer ones should be mailed to the members of the Association. We suggest that patients be better screened before being sent to cancer clinics and that terminal cases be taken care of on a local level. It is gratifying to see that the state is able to take more cancer patients, including special cases of cancer of the lung, brain, skin, and lymphoid system. We hope that in the near future more can be done for patients who are now being sent to tumor clinics, not only in the way of immediate treatment but some follow-up care such as home nursing.

We have a number of cured cancer patients throughout the state and it might be worth while to get these groups together in order to help educate and probably boost the morale of the more pessimistic cancer patients, letting them see that some have been cured and are carrying on their role in society.

RECOGNITION

We want to express our sincere appreciation to Dr. W. H. Y. Smith and his group for their co-operative methods in handling the state tumor clinics. We further wish to express our appreciation to Drs. D. G. Gill and D. L. Cannon for the publicity given through the Journal.

Again, the Cancer Committee wishes to express its appreciation for the excellent work being done by the American Cancer Society, Alabama Division, under the leadership of Mrs. Lillian G. Meade.

Lastly, we wish to express thanks to the members of the state-aid clinics for doing such an excellent and unselfish job for indigent cancer patients in Alabama.

John Day Peake  
Chairman  
J. P. Chapman  
F. H. Craddock, Jr.  
W. N. Jones  
A. E. Casey

REPORT, ALABAMA DIVISION  
AMERICAN CANCER SOCIETY  
MRS. LILLIAN G. MEADE  
STATE COMMANDER AND  
EXECUTIVE DIRECTOR

Another year in the history of the American Cancer Society, Alabama Division, has rolled around, and as Executive Director I am pleased to report to the Cancer Committee of the State Medical Association, and to the Association as a whole, on the work of the Division.

The American Cancer Society, Alabama Division, is proud of the fact that it is the only organization in the state approved by the American Medical Association, the American College of Surgeons, and the State Medical Association for its three-point program of research, education and service.

I believe that all the members of the Association will join with the Executive Director in saying that the most important thing we have done

this year is the promotion of the Cancer Seminar, January 27-28, in Birmingham.

The compliments that came because of the calibre of this Seminar were many. The Cancer Society is happy to have been able to have financed such a project, as a part of its professional education program.

The American Cancer Society has continued its program of lay education during the year through its Commanders in each county by showing films, distributing literature, making talks to civic groups, especially showing the "Breast Self-Examination" film to women, and "The Warning Shadow," which is a film on lung cancer, to men's groups. These will continue to be circulated during the coming year, as well as our other films. There is a growing interest in the use of films to discuss the problem of cancer.

Our business and industry program of education has been expanding steadily the past year also.

Additional funds were granted during this past year to institutions doing cancer research in Alabama. Total is as follows from 1945 to date:

Southern Research Institute,	
Birmingham, .....	\$284,471.00
Cancer Research Laboratory, Medical	
College of Alabama, Birmingham .....	162,455.00
Alabama Polytechnic Institute,	
Auburn .....	119,400.00
Tumor Registry, Birmingham .....	31,442.98
Tuskegee Institute, Tuskegee .....	7,000.00
Total Amount .....	\$604,768.98

In addition to this, the sum of \$1600 was granted to the Mobile Tumor Clinic for clerical assistance.

The sum of \$8500 was given to Alabama Polytechnic Institute, Auburn, to air condition the animal laboratories, and the first grant (\$1,000) in the field of cytology has been given recently to a medical technician from Mobile Infirmary.

The Alabama Division had a most successful financial campaign during April 1953, raising slightly over \$196,000. Our goal for the 1954 campaign is \$200,000.

We have expanded our service program as far as our funds enabled us, and cooperate with the State Health Department, and the law under which medically indigent cancer patients are treated under its supervision.

We have paid for the transportation of patients to the five (5) state-aid clinics, furnished bandages and dressings to these patients, and others who were too far advanced to receive anything except comfort; paid for medicine for palliative treatment when requested by the person's physician, and for special x-ray treatments for persons who were not eligible under the State Health Department service.

The Cancer Society would like to call your attention to the fact that while it is paying bills for medicine for palliative treatment for medically indigent cancer patients, requests for this

aid must be made by the patient's own physician, and the bills signed by the doctor giving the prescription before payment is made directly to the pharmacy.

The demands for aid are increasing every day, and the American Cancer Society will expand its service program as far as its funds will allow. However, research and education will continue to be our primary aims.

The Executive Director continues to travel all over the state of Alabama making talks to civic groups, both men's and women's, as well as organizing the sixty-seven (67) counties for education, and then working closely with the county campaign chairmen during the fund-raising campaign.

During the past year we have added one person to our state staff. We now have two individuals who work in the state full time, one person who works half-time in Jefferson County, and half in the state, and two secretaries. This is the entire permanent paid staff of the American Cancer Society, and we are very proud of the fact that we have been able to keep our salary scale to such a very low ebb. Only a very devoted staff makes this possible.

The Cancer Society has available in its office, for the use of the doctors of Alabama, the following films:

Gastro-Intestinal G-I.

Breast Cancer.

Uterine Cancer.

Cancer—The Problem of Early Diagnosis.

These films are available upon request, without charge, to any doctor in the state, and it is hoped that they will be used by County Medical Societies during the year. I am glad to report their use increased during the past year.

The American Cancer Society, Alabama Division, through its Executive Director, is very proud of its close cooperation with the Cancer Committee of the Medical Association, and the State Health Department, but would welcome suggestions to improve its program. One of the greatest problems it has is how the doctors may be advised to handle the problem of medically indigent cancer patients. The Division is daily in receipt of questions from doctors and individuals who do not know how this program is carried out. I would respectfully recommend that further information be given to each doctor in the state through the Cancer Committee of the Association.

The American Cancer Society pledges its continued cooperation to the Association, and would welcome any assistance in making the American Cancer Society, Alabama Division, a better functioning organization for the control of cancer.

#### *Postgraduate Study*

The same general plan previously followed through cooperation of the Postgraduate Seminar Committee and clinical faculty of the Medical College of Alabama with the Association's Committee and various medical assemblies has been followed throughout the year.

The subjects presented and discussed were chosen by the various assemblies, and funds for financing the program were made available through the honoring of field vouchers by the State Department of Health and individual assembly fees. The program is listed below.

#### BLACK BELT POSTGRADUATE SEMINAR SOCIETY (consisting of ten counties)

Subjects discussed during period April 1, 1953-March 31, 1954

May 21, 1953—Acute Liver and Gallbladder Diseases (Surgical); Acute Liver and Gallbladder Diseases (Medical).

July 16, 1953—Medical-Surgical Symposium.

Sept. 17, 1953—ENT for Office of General Practitioner; Operative Obstetrics.

Nov. 19, 1953—Rheumatic Disorders; Common Neurologic Disorders.

#### CENTRAL ALABAMA POSTGRADUATE MEDICAL ASSEMBLY (consisting of five counties)

Subjects discussed during period April 1, 1953-March 31, 1954

April 14, 1953—The Clinical Importance of Disorders of Blood Clotting.

April 28, 1953—Problems in Anticoagulant Therapy.

May 12, 1953—ACTH and Cortisone.

May 26, 1953—The Collagen Diseases.

June 9, 1953—Pituitary and Adrenal Syndromes.

June 23, 1953 and July 14, 1953—Disorders of Carbohydrate Metabolism.

July 28, 1953—Endocrinology in Gynecology.

Aug. 11, 1953—The Management of Anemia by the General Practitioner.

Aug. 25, 1953—The Treatment of Inoperable Neoplastic Disease.

Sept. 8, 1953 and Sept. 22, 1953—Cardiac and Peripheral Circulatory Failure; Common Mechanisms of Disturbed Fluid Balance; Treatment of Disordered Fluid Balance.

#### MARION COUNTY MEDICAL SOCIETY (consisting of five counties)

Subjects discussed during period April 1, 1953-March 31, 1954

June 11, 1953—Fractures of the Hand; Urinary Calculi.

Oct. 1, 1953—Physical Medicine in Every Day Practice.

Aug. 6, 1953—Nipple Discharge; Obliterative Arterial Disease.

Feb. 4, 1954—Management of Congestive Heart Failure; Surgical Management of Some Common Injuries.

Total—Twenty assemblies—twenty-three members of the faculty of the Medical College presented and discussed the above subjects.

It is evident that a varied number of important subjects have been presented to the membership of 20 counties throughout the year. It is the hope of the Postgraduate Committee of the Medical College of Alabama and the Association that more counties will form assembly groups and take advantage of the opportunities afforded for the high type of instruction that has been given to those participating in the program. Any county or group of counties that can guarantee an attendance of at least 15 physicians may have the advantage of this type of instruction by contacting Dr. James R. Garber, Chairman of the Seminar Postgraduate Committee of the Medical College of Alabama, who will gladly arrange for the organization of assemblies and speakers on subjects chosen by them.

RECOMMENDATIONS

It is recommended by the Committee that the above type of instruction be continued throughout 1954-1955 and that, as previously done, the Department of Public Health make available the sum of \$1,500 through the issuance of vouchers, which may be supplemented by funds of the Association not to exceed \$1,000 if expansion of the program demands further funds.

Financial Statement

<i>Receipts by the Medical College of Alabama</i>	
3-31-53 Balance on Hand .....	\$ 350.65
Fees from Medical Assemblies .....	258.00
Total .....	\$ 608.65
<i>Disbursements by the Medical College of Alabama</i>	
Secretarial Services .....	\$ 420.00
Postage .....	6.00
3-31-54 Balance on Hand .....	182.65
Total .....	\$ 603.65
<i>Agency Funds Placed at Disposal of Committee through Field Vouchers by:</i>	
State Department of Health .....	\$1,500.00
<i>Field Vouchers for:</i>	
Honoraria and Travel .....	\$1,330.00
Unexpended .....	170.00
Total .....	\$1,500.00

The Committee desires to express its appreciative thanks to the participating lecturers, the chairman and members of the Postgraduate Seminar Committee of the Medical College of Alabama and the various assembly groups for their interest and services; the State Health Officer, Dr. D. G. Gill and the State Board of Censors for providing available funds necessary for promoting the program.

Ralph McBurney  
Chairman

Alfred J. Treherne  
Albert S. Dix

Mental Hygiene

Your Committee wishes to call to the attention of the Association the following developments in

the field of mental hygiene and psychiatry during the past year:

1. Your Committee wishes to express its appreciation to the Association for its support of the State Hospitals and mental health program. A substantial appropriation was made by the Legislature to the State Hospitals for patient care and for building purposes. An appropriation was made to the State Health Department for the mental health program. With your support the State Hospitals and the mental health program have been free of unnecessary and unwarranted criticism and have been able to provide more efficiently the necessary services to our people.

2. We wish to advise the Association of the mental health activities resulting from the Southern Governors' conferences, held in Atlanta and Nashville. Alabama was represented by Dr. J. S. Tarwater, Superintendent of the Alabama State Hospitals, Dr. Frank Kay, Chairman, Department of Psychiatry, University of Alabama, Dr. D. G. Gill, State Health Officer, and Dr. John McKee, Director, Division of Mental Hygiene, State Health Department. Under the auspices of that committee Dr. Paul Givens, Professor of Psychology, Birmingham-Southern College, is currently conducting a survey of the mental health resources of our state. We ask your co-operation.

3. Your Committee has a communication from Mr. H. F. Singleton, Executive Director of Blue Cross-Blue Shield, to the effect that plans are being seriously considered to offer one group coverage for mental illness before the end of the year. He also tells us that he believes when this has been accomplished, this necessary protection will be offered to all Blue Cross-Blue Shield subscribers as contract changes are made.

4. For the past six years changes in our commitment laws have been considered by this Committee and the Legislature. With the help of members of this Committee, the recent Legislature did not see fit to make any changes in our laws.

5. The recent Legislature passed a law making the maintenance of a patient in a State Hospital, at least in part, and insofar as is feasible, the responsibility of the family. The determination of responsibility and its financial extent is determined by the Register of the Circuit Court and Welfare Department in each county. The mechanics of this legislation are being clarified and placed in operation.

6. We recommend for your confidence, Dr. John M. McKee, Clinical Psychologist, recently appointed Director of State Mental Health program, and Dr. J. Wilburt Edgerton, recently appointed Executive Director of the Alabama Association for Mental Health.

7. We wish to call your attention to the establishment of Mental Health Societies in Tuscaloosa, Etowah and Lee Counties, in addition to those already established in the Muscle Shoals region, Birmingham, Montgomery, Tuscaloosa, and Mobile. We urge you to affiliate with your local group.

8. We recommend that consideration be given to the establishment of a state supported in-patient service for mental illness in the Birmingham Medical Center. Since approximately 1/3 of the state's population resides within Jefferson and adjacent counties, and more than 1/2 in the northern section, such an in-patient service would greatly relieve the facilities at Bryce Hospital and other State Hospitals.

J. S. Tarwater  
Frank A. Kay  
Jack R. Jarvis  
*Chairman*

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#### *Blindness and Deafness*

The Eye Foundation, Inc., has received funds totaling \$77,500.00 and has purchased a quarter of a block of land immediately west of the Veterans Hospital in Birmingham, Alabama, where it is hoped to construct an Eye Foundation Center for hospitalization of patients and research on problems dealing with blindness.

Following the recommendations of the State Board of Censors, correspondence was developed with mayors of the larger Alabama cities and recommendations were made for the enactment of ordinances restricting the sale of air rifles and B-B guns. It has been noted that some of these communities have enacted such legislation.

During their fiscal year September 1, 1952 through August 31, 1953, the physicians of the Alabama Sight Conservation Association rendered medical and surgical care to 544 patients. This is a total of 4,133 patients that have received such care. Of this number 303 were examined in Birmingham, 102 in Montgomery, 45 in Tuscaloosa, 31 in Mobile, and 29 in Tuskegee. Of these patients, 288 received surgery, and 304 were supplied with glasses, implants, or prosthetic eyes. Medicine was furnished to 780 patients.

Agencies cooperating with the Alabama Sight Conservation Association are the Alabama Institute for Deaf and Blind, the Vocational Rehabilitation Division of the State Department of Education and its Crippled Children's Division, the AOT Sorority Alumni, and the Eye Foundation, Inc.

Karl Benkwith  
Richard M. Grayson  
Alston Callahan  
*Chairman*

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#### *Tuberculosis*

##### *Slogan*

"Let's Eradicate Not Attenuate TB"

Seventy-two years ago, in 1882, Robert Koch announced the discovery of the tubercle bacillus. Two years later, Dr. Edward Trudeau opened the first American tuberculosis sanatorium in the Adirondack Mountains of New York state. These two events marked the beginning of a scientific attack on the great white plague, then the leading killer of mankind in most of the civilized world.

The next great milestone in the medical attack on tuberculosis came ten years ago when Schatz and Waksman announced that streptomycin was effective against *M. tuberculosis*. Streptomycin, and later iso-nicotinic acid and PAS, opened brand new and more effective avenues in the fight to eradicate the disease.

#### *DECLINE IN MORTALITY*

Fifty years ago the tuberculosis death rate was 188 per 100,000, while today it is less than one-tenth of that figure, representing a 90% decline over the half-century span. If that mortality rate were to prevail today, 300,000 rather than 30,000 persons would be dying annually of tuberculosis in this country.

A second achievement rarely noted is the advancing age at death for those who died of tuberculosis. In 1924 the median age at death was 33.3; in 1934 it was 37.9; by 1944 it had advanced to 43.0, while in 1950 it was 49.7.

Tuberculosis is rapidly becoming a disease of men and particularly of older men. It is difficult to realize that today half of all deaths from tuberculosis in this country are those of men 40 years of age and older.

The accelerated decline in tuberculosis mortality which has occurred during the past five or six years is usually attributed to adoption of new forms of treatment. The use of excisional surgery has increased greatly, as well as treatment by means of the antimicrobial drugs which have proved very effective in keeping alive many of those who would otherwise have died from this disease. Thus, we have a greatly lowered death rate from tuberculosis but at the same time more patients remaining under treatment than ever before. This fact, together with augmented case finding, has resulted in a greater accumulation of patients under treatment than were previously known, even though both morbidity and mortality are declining.

During the last two years, in spite of intensified emphasis on case finding, the number of new cases reported has declined appreciably. In 1952 the total number of new cases reported to health departments in the United States was 109,837, of which 85,607 were active or probably active. However, this has not been the experience in Alabama as there were 948 new cases discovered in the state clinics in 1952 as compared with 2,131 in 1953, even with a lowered clinic attendance. (See table 2.)

#### *ALABAMA'S MID-CENTURY TUBERCULOSIS PICTURE*

Tuberculosis, although on the wane at the present time, is still an ever-present menace which is, needlessly, taking the lives of our beloved citizens. This is regrettable in view of the fact that the disease is preventable and that we have developed new life-saving advances in measures to control and treat the disease.

In the Alabama mortality scale of the ten major causes of death, the disease has dropped from 8th place in 1952 to 9th place in 1953. (See table 1.) There was also a similar drop in deaths attributable to the disease from 560 at the rate of

17.8 in 1952 to 467 at the rate of 14.7 in 1953 which is an all time low. Particularly significant is the rapidity of drop from the 1947-1951 average of 30.5 to 14.7 in 1953, indicating that the rate has been halved during this short span of time (see table 1).

"ALABAMA'S CLOUD OVER THE HORIZON"

I. 11,874 Alabamians still have pulmonary tuberculosis—a slight increase over last year. A sharp distinction should be made between incidence and prevalence. The annual incidence is the number of new cases which develop in a year, the prevalence of tuberculosis is the number of existing cases, known and unknown, on any given date. Although the death rates in Alabama are falling, the incidence and prevalence are increasing slightly, which is in contradistinction to national trend in the latter two instances.

TB Prevalence

Year	TB Cases
1942	6,157
1951	10,252
1952	11,555
1953	11,878

II. 467 Alabamians succumbed, needlessly, to the disease in 1953. With adequate financing and a sufficient number of beds this downward trend should be greatly accelerated.

III. Tuberculosis occupies 9th place in the mortality scale of the ten major causes of death in Alabama.

IV. Lack of sufficient modern curative surgical facilities: This is one of the most serious needs at the present time and progress in combating tuberculosis will continue to be retarded until patients are able to obtain curative surgery at the optimum time. Your Committee does not care where or how many surgical facilities are provided so long as they handle the surgery when needed.

DIVISION OF TUBERCULOSIS CONTROL  
ALABAMA STATE BOARD OF HEALTH

Tuberculosis control activities of the state diagnostic clinics continued to be curtailed in 1953 with prospects of even greater curtailment in 1954 because of decreases in both state and federal funds appropriated for that division. An analysis of table 2 reveals that only 139,522 people were x-rayed but that the yield of positive cases was greater because of a better selection of clinic material. (See table 2.)

Table 1  
Ten Major Causes of Death

	1953 (Provisional)		1952		1947-1951 (Average)	
	No.	Rate	No.	Rate	No.	Rate
1. Diseases of heart	8,214	259.1	8,178	261.2	7,261	238.4
2. Vascular lesions	3,380	106.6	3,327	106.4	2,932	96.3
3. Malignant neoplasms	3,074	96.9	2,991	95.6	2,732	89.7
4. Accidents	1,843	58.1	1,933	61.8	1,857	61.0
5. Pneumonia	941	29.7	944	30.2	1,098	36.0
6. Immaturity	682	21.5	712	22.8	867	28.5
7. Nephritis	599	18.9	717	22.9	1,245	40.9
8. Diseases of arteries	474	14.9	445	14.2	314	10.3
9. Tuberculosis	467	14.7	569	18.1	930	30.5
10. Influenza	390	12.3	275	8.8	266	8.7

Rates are per 100,000 population.

Table 2  
Ratio of New Cases of Tuberculosis to Number of Individuals X-Rayed by Year 1947-1952.

Year	No. X-Rayed	No. New Tuberculosis Cases
1947	72,736	3,051
1948	199,244	2,773
1949	212,751	2,624
1950	396,100	3,092
1951	230,162	2,661
1952	142,246	948
1953	139,522	2,131

Consultation service in the interpretation of x-ray films sent in by private physicians for diagnosis revealed a slight increase. (See table 3.)

Table 3

Year	Consultations
1948	333
1949	594
1950	492
1951	408
1952	354
1953	395

Activities of this division are being curtailed because of a further gradual decrease in federal funds allocated for this purpose. (See table 4.)

Table 4  
Federal Funds Allocated for State Tuberculosis Control by years

1948	\$152,000.00
1949	150,362.00
1950	148,404.00
1951	144,406.00
1952	135,000.00
1953	125,655.80

As this report was being prepared, the State Department of Health announced another proposed cut in federal tuberculosis grants to Alabama in the amount of \$51,800 for the fiscal year beginning July 1. This means a decrease of 52% over the current grant.

The finance director of the State Health Department says this will cause serious curtailment of the department's case finding program: Where 10 mass x-ray units are now operating, only seven can be maintained with the decreased allotment. It is estimated only 60,000 x-rays can be made, visits to tuberculosis diagnostic and treatment clinics will be cut from 50,000 to 25,000, and analysis of TB laboratory specimens will be cut from 38,500 to 23,000.

STATE SUBSIDY PLAN

The state subsidy improved considerably but still fell short of the amount guaranteed by the Legislature of \$2.00 per patient day. This was brought about by two factors: the Health Department failed to estimate properly the amount

of money needed; and several institutions exceeded their licensed bed capacity, creating an unanticipated demand on these funds. Based on the 1952 patient days, 252,006 X \$2.00 equals \$499,800, the amount which should have been requested instead of \$450,000. (See table 5.)

Table 5  
State Subsidy for Tuberculosis Patients

Year	Per Diem	Patient Days	Hospital Beds	State Appropriation
1947	\$1.00	200,632	668	185,000
1948	\$1.50	217,621	674	300,000
1949	\$1.30	211,430	674	300,000
1950	\$1.30	226,548	708	300,000
1951	\$1.50	236,421	708	300,000
1952	\$1.86	252,006	708	450,000
1953	\$1.87	249,900	759	450,000
1954	\$2.50 or \$4.00	249,900?	759?	779,237 plus conditional 500,000

REPORT ON TB LEGISLATION

The Alabama Legislature completed its calendar of TB considerations during the Senate session September 8, and below is the amount of money appropriated by the state for the next two years.

	1953-54	1954-55
Total assured from general budget	779,237.00	891,475.00
Conditional appropriation	500,000.00	500,000.00

At the annual meeting of the Tuberculosis Association in Birmingham September 29, a surprise feature was a message from Governor Gordon Persons to the effect that \$500,000.00 conditional appropriation from the state to supplement hospitalization had as of that day been removed from the conditional status and would become an actuality beginning October 1. Since October 1, 1953, the institutions have been receiving \$2.50 per patient day on the following basis:

1. The state will split per patient day costs on a 100-80 basis with the county. That is, the state will put up 10 cents for every 8 cents put up by the county.
2. The maximum amount the state will put up from the general budget is \$2.50 per day. In order to get this maximum, the county will have to put up \$2.00. If the county cannot put up \$2.00, it may put up whatever amount it can afford and receive subsidy from the state on a 100-80 basis.
3. There are NO STRINGS attached to the \$500,000 conditional appropriation.

RECOMMENDATIONS

- I. That Alabama's State Government continue to accept its proper responsibility to protect its citizens from this public enemy—tuberculosis.
- II. That the state of Alabama, the Health Department and the Medical Association take immediate steps to provide surgical facilities for the operative and curative treatment of tubercu-

losis. The lack of surgical facilities is the number one problem of the smaller institutions in Alabama today.

Paul W. Auston  
*Chairman*

W. J. Tally  
L. O. Davenport

Anesthesiology

The Alabama Society of Anesthesiology met in Birmingham on March 8, 1954. Dr. Donald Stubbs, Professor of Anesthesiology at the George Washington University in Washington, D. C., spoke on Economic Trends in Anesthesiology. Sixteen of the state's twenty members were present at the meeting. In keeping with the Society's improvement policy, it was decided to have state meetings quarterly in various cities.

The Lloyd Noland Hospital in Fairfield and the Medical College of Alabama in Birmingham report continued success and progress in their residency programs. The number of both full and part time residents has increased. Physicians who are interested in postgraduate study in anesthesia are urged to contact either of these institutions concerning arrangements. Well trained physician-anesthetists are needed throughout Alabama, and it appears as though we must supply this need from within our state.

Your Committee wishes to point out that Blue Cross is still including anesthesiology, pathology and radiology in its policies as "hospital services" despite the resolution of the House of Delegates of the A. M. A. on December 3, 1953 condemning all insurance contracts which do so. It is felt that policies of this type lower the quality of medical care and, therefore, that these medical services should be covered by Blue Shield as are other physicians' services.

Finally, emphasis is placed on application of the modern concept of the "Surgical Team" wherein the anesthesiologist helps to care for the patient before, during and after surgery as his contribution toward successful surgical results. Thus the patient receives better choice of anesthesia, more sound pharmacologic and physiologic management during anesthesia, and careful post-anesthetic care. The scope of surgery has become so broad that the surgeon has more than enough to do handling his own problems and he owes it to the patient to supply him with an anesthetist who is equally as well trained as himself, and who can supply sound medical anesthetic management.

Alfred Habeeb  
*Chairman*

W. P. May  
Alice McNeal

Industrial Medicine

On March 1, 1954 Dr. Carl M. Peterson, Secretary of the Council on Industrial Health of the American Medical Association, addressed a group of Birmingham physicians interested in industrial medicine, and a local organization of

men in this field was perfected with an initial membership of some twenty five doctors.

Two lectures on industrial medicine were given the Senior Class of the Medical College of Alabama in March.

The Chairman of the Committee attended during the year a meeting of the American Medical Association's Council on Industrial Health held in Louisville.

D. O. Wright  
Chairman  
W. G. Thuss  
E. A. Isbell

#### *Committee of Publication*

Douglas L. Cannon, Chairman

The monthly circulation of the Journal of the Association on December 31, 1953 was 2,025 copies, of which 1790 went to members, 96 to exchanges throughout the United States, 63 to advertisers and advertising agents, and the remainder to non-member subscribers and stock.

Financial experience was not quite so favorable in 1953 as it was in 1952, cost of publishing and distributing the Journal exceeding advertising and miscellaneous receipts by \$1887.83. However, this is not alarming when it is considered that no part of annual dues paid by members is dedicated to the Journal exclusively, the total of all dues received, exclusive of the portion belonging to the Committee on Medical Service and Public Relations, being considered a pool from which the cost of the general operations of the Association is met, as well as any deficit in the Journal account.

Transactions of the 1953 meeting were also furnished the members of the Association, and the cost of this item was \$1678.28.

#### *Blue Cross-Blue Shield*

The Alabama Blue Shield Plan is of relatively recent origin. Many of us recall the time, exactly ten years ago, when Dr. Walter F. Scott, Sr., then President of the State Medical Association, appointed a Post-War Planning Commission. The Association felt that it was imperative to develop a non-profit, voluntary insurance plan, similar to Blue Cross for hospital care, to meet the cost of medical and surgical care.

The purpose of the Post-War Planning Commission was to study the problems relating to the practice of medicine as it affected the public, the returning servicemen, and physicians.

Members of this Committee travelled into virtually every state that had an existing medical plan in operation, studying, comparing, and formulating a plan of its own.

When the recommendations were completed and accepted, the Medical Association petitioned Alabama's Blue Cross Plan, then nine years old, asking that it take on the operation of Blue Shield for medical-surgical care as an extension of the Blue Cross program for hospitalization. By 1946, Blue Shield of Alabama was a reality. The

principle of indemnity payment was adopted and has been practiced since the beginning, in Alabama.

Public acceptance and confidence in Blue Shield is evidenced by the following facts:

1. *Enrollment:* In 1946 Blue Shield had 45,928 members. This has increased so rapidly that on December 31, 1953 the membership was 494,217. This is still increasing and is now the largest in the South.

2. *Services Rendered:* Last year, 1953, 1,620 physicians in Alabama, all members of this Association, treated 76,391 patients in hospitals under the Blue Shield Plan. Thousands more were treated as outpatients.

3. *Finances:* In the year just past, 1953, Blue Shield had a total earned income of \$3,574,071.42. Of this amount 87.6%, or \$3,131,196.88, was paid to physicians of this Association for services rendered its subscribers. The rest of this income was divided between operating expenses of 10.4% and reserve of 1.8%.

4. *Utilization of Blue Cross-Blue Shield:* In 1953, 140 members per 1,000 members were hospitalized and treated.

Your Committee, composed of Dr. J. G. Daves, Cullman, Dr. T. B. Hubbard, Montgomery, Dr. B. W. McNease, Fayette, Dr. John E. Moss, Mobile, Dr. Bryce Robinson, Fairfield, and Dr. J. P. Collier, Tuscaloosa, are members of the Executive Committee of the Corporation, and as such help to set and administer its policies, along with the hospital and the public members. All of your committeemen have been very active throughout the past years and attendance at all Board meetings has been good. A good job has been done in looking after the interests of the members, the physicians, the hospitals, and the Corporation by your Committee members.

Your Committee believes that Blue Shield is accomplishing the aims for which it was created; that is, bringing the best of modern medical care within the reach of thousands on a low cost prepayment plan, with its indemnity type contract. We believe it has also helped the physician financially, and made his work easier.

Your Committee believes that the Plan is sound financially and is being operated very economically, as shown by the operating expense of only 10.4%. We believe that the payment of 87.6% to physicians for the benefit of patients is excellent. This is over twice the amount paid by any other insurance plan operating in Alabama.

We realize that under our present plan of paying the physician that there is some unfairness. Under our present method those physicians practicing the surgical specialty are quite well compensated, while those practicing the medical specialty are not. We are faithfully trying to remedy this situation, but any solution will call for complete cooperation from all physicians.

Your Committee wants again to call your attention to the fact that Blue Shield is YOUR PLAN. It was conceived by this Association, and is administered for the Association by your Com-

mittee. We welcome your suggestions for improvements and changes.

We want to point out that the utilization of the Plan in Alabama is 140 per 1,000 against the Nation's utilization of 129 per 1,000. When we recall that only a physician can admit a patient to a hospital, and only a physician can discharge a patient from a hospital, it is quite obvious that this utilization rate is the responsibility of the physician, and can only be controlled by him.

Last year, if we had lowered this rate down to the national average, we would have saved some \$600,000.00 which could have been used for added benefits. We urge you to help control this rate by only hospitalizing members that really need it.

As the members of this Association know, Blue Shield now offers only an indemnity type contract. This means that the Plan only guarantees up to a certain fee for services rendered, and that the physician can charge any fee he wants to and collect the rest from the patient.

Your Board of Censors, in its report to you at the 1952 meeting, said in one part, and here I quote:

"The Board recommends that the six representatives of the Association on the Hospital Service Corporation's governing body be empowered to continue studies of this whole problem and report to the Association on indicated matters."

Following this directive, we have continued this study and have the following report to make:

Since the 1952 session of the Association, when the subject was last considered, there have been considerable changes and expansion in voluntary prepayment insurance to provide medical care under the Blue Shield plans in the United States. Blue Shield is sponsored and directed by the medical profession. At this time there are 76 Blue Shield plans in the United States and Canada. Of this number, 58 offer a service plan, and of those offering a service plan 22 operate statewide. For example, such states as Kansas, Maryland, South Carolina, North Carolina, Florida, Virginia, and the District of Columbia are some that have such Blue Shield service plans. Also nearby, the Blue Shield organization in Columbus, Georgia, has a service plan. Due to the change in times and conditions, and in order that such matters can continue to be handled on a voluntary basis, and due to the fact that the public in ever-increasing numbers requests a service plan, we recommend the service plan principle for lower income groups. As further information along this line and as shown in the latest figures that we have available, June 30, 1952, there were 23,277,080 enrolled with Blue Shield plans. Of this number, 17,328,098, or 75 per cent, were enrolled in service plans. Since that time there has been considerable increase in the number of enrollments. Therefore, the representatives of the Association on the Blue Cross-Blue Shield of Alabama governing body recommend that further consideration be given to Blue Shield service plans, and towards that end they recommend that it would be in order for County Medical So-

cieties to approve a service plan for the lower income groups in those counties where it is desired or is practical.

J. P. Collier  
*Chairman*

*Report of Special Committee on Medical Care  
Program of the United Mine Workers*

The Medical Association of the State of Alabama in annual session at Birmingham, April 16-17-18, 1953, on recommendation of the Vice-President of the Northwestern Division, adopted the following recommendation: "that the new president appoint a committee of members from the counties involved to work out problems connected with the Medical Care Program (of the United Mine Workers Welfare and Retirement Fund) and to report back its recommendations."

In carrying out its mission, this Committee has held several meetings and has also met with administrative officials of the U. M. W. Fund, and has the following to report:

The United Mine Workers of America Welfare and Retirement Fund, commonly referred to as the Fund, was established on May 29, 1946 by means of an agreement between the Union and the coal producers of the United States. At present the Fund is financed by royalty payments of 40 cents per ton. Out of the Fund thus accumulated is furnished to its beneficiaries pensions, hospital and medical care, certain rehabilitation services, etc. The Fund has been operating in Alabama for five years, and its Medical Care Program is administered by an Area Medical Administrator, Allen N. Koplin, M. D. It operates in those areas of Alabama where coal mining is carried on. Therefore, the Fund, through its Area Medical Administrator, purchases medical and hospital care for the beneficiaries of the Fund.

Expenditures from the Fund in the United States for the year ending June 30, 1953 were in excess of 138 million dollars. Of this amount, 56 million dollars was spent for medical and hospital services. In its annual report the Fund points out that responsibility for a medical care program must rest entirely in medical hands.

Since the Fund began operating, there are people in this state getting medical care that formerly were unable to pay for it or possibly were charity patients. It has also made possible the rendering of a high type of medical and hospital care that was not always available to these people. In other words, there are two million coal miners and their dependents in the United States who now have a high grade of medical care available to them, which, from the medical profession's standpoint, is certainly desirable, and it is felt that the present aim is an improvement over some of the former systems for providing them medical care. Also, since the Fund provides certain benefits to coal miners and their families, it certainly alleviates certain expenses that formerly had to be paid by the taxpayer at the county and state level.

Your Committee finds that the main points of disagreement between members of the medical profession and the Fund in carrying out its mis-

sion of purchasing medical care are the questions of (1) which physicians will participate in the Fund's program and (2) payment of fees for services rendered to beneficiaries of the Fund. The Area Medical Administrator informed us that when the Fund began operating in this state all physicians in the areas concerned were invited to participate. Some did not desire to do so and others dropped out after taking part for a while. We were informed that it had been a very rare occasion that a physician was actually dropped from the participating list. Most of the physicians who participate in the Fund's Medical Care Program are paid a fee for service rendered. There are others who, on a voluntary basis, are paid a monthly fee for the furnishing of previously agreed upon medical services. The Area Medical Administrator stated that the Fund desired to purchase hospital and medical services at a fair and reasonable fee. The Fund does not have a fee schedule, nor does it recommend one. The Committee found instances in which members of the medical profession had difficulty in determining just what is considered a "fair and reasonable fee." There were occasions on which physicians submitted their bills and had them returned with the request that reconsideration be given to the amount of the fee and that an adjustment be made. In such cases that the Committee studied, it found none that it would consider to be unreasonable as originally submitted. Except in unusual emergencies the Fund only makes payments to hospitals and physicians who, by prior arrangements, are participating members of its program of medical and hospital care. Should a coal miner or his family go to a physician not on the participating list, then the miner must personally assume the financial obligations. At this time, the Fund provides the necessary in-hospital medical and hospital services, but there are no arrangements for payment to the general practitioner who is considered as the family doctor or for home care. There are provisions for payments to physicians for office service on a consultation basis.

Liaison committees have been established by state medical associations in many of the coal mining states to develop and maintain cooperative relations between practicing physicians and the medical administrators of the Fund. The Council on Medical Service and the Council on Industrial Health of the American Medical Association have taken part in conferences on the medical-hospital problems in the bituminous coal mining areas, and the reports on these conferences have appeared in the Journal of the American Medical Association in 1952 and 1953, and they commend the establishment of liaison committees.

It is the recommendation of this Committee that a permanent liaison committee be appointed by the Association with representation from those counties where the Fund operates. It would be this liaison committee's function to contact

the area medical administrator as the occasion warrants and work out any problems that might arise between the medical profession and the Fund. The liaison committee would deal with questions of policy and Fund medical problems. Such a committee of the Jefferson County Medical Society has been in existence several years.

Respectfully submitted,  
A. C. Jackson  
Walter C. McCoy  
T. J. Payne  
Harold E. Simon  
Charles H. Wilson  
E. Bryce Robinson, Jr.  
*Chairman*

REPORTS OF OFFICERS

*Report of the Secretary-Treasurer*

Douglas L. Cannon

FOREWORD

The affairs of the Association have moved forward with smoothness under the leadership of its President, Dr. J. O. Morgan. Nothing unexpected, unnatural or disconcerting has happened to mar its program of service to the people of Alabama. Membership, as is to be recorded in the succeeding paragraph, reached a new high level despite the number of our physicians who received the final summons. Not within the memory of your Secretary has the Association lost three of its past presidents within a span of twelve months. Their names appear in the obituary record.

MEMBERSHIP OF THE ASSOCIATION

Of the state's 2,088 physicians, 1,914 consider affiliation with the Association a thing of value, an increase of 48 in the number of a year ago. Net increase in physicians in Alabama since April 1, 1953 was 38.

DEATHS

Death has laid a very heavy hand upon us since my report of 1953 was rendered. Included in the sixty (60) of our number lost to us were Life and Active Counsellors, former members of the State Board of Censors, and past presidents of the Association. The complete obituary record is as follows:

Acker, P. J. M.	Mobile
Atwood, A. L.	Birmingham
Bayles, Lewis E.	Anderson
Bobo, A. H.	Covin
Boggs, L. K.	Birmingham
Bradford, D. C.	Birmingham
Braswell, W. C.	Elba
Crawford, J. H.	Columbiana
Dedman, J. E.	Betterton, Md.
Dixon, Duncan	Talladega
Dowdy, R. W.	Floralda, Rt. 1
Eiland, R. J.	Clanton
Finley, W. A.	Cherokee

Gay, N. S.	Whistler
Grosfeld, William	Decatur
Guice, C. L.	Gadsden
Hagood, J. W.	Evergreen
Haigler, J. R.	Montgomery
Harper, W. F.	Selma
Hartung, C. F., Jr.	Bridgeport
Harwood, R. E.	Gainesville
Hilt, J. L.	Lineville
Hodgson, P. M.	Bay Minette
Hogan, G. A.	Birmingham
Howell, J. V.	Marion
Inge, F. M.	Mobile
Kennedy, J. J.	Tuscaloosa
Laslie, C. G.	Montgomery
Lovelady, W. H.	Hartselle
Marvin, T. R.	Marion
Massey, B. J.	Enterprise
McCann, R. B.	Seale
McDowell, J. F.	Birmingham
McGehee, H. T.	Birmingham
McLaughlin, J. D.	Blue Springs
McLester, J. S.	Birmingham
McQueen, J. P.	Birmingham
Moore, J. G.	Birmingham
Motley, J. P.	Ensley
Partlow, W. D.	Tuscaloosa
Salter, P. P.	Eufaula
Sanders, J. G.	Foley
Savage, Victor	Kennedy
Scales, W. W.	Mobile
Scott, Marvin	Headland
Shaw, R. W.	Gilbertown
Sizemore, D. M.	Sulligent
Sledge, E. S.	Mobile
Stallworth, E. L.	Evergreen
Stansberry, C. L.	Oneonta
Taylor, E. E.	Mobile
Thomas, E. M.	Prattville
Walker, A. A.	Birmingham
Wallace, A. D.	Plantersville
Watkins, M. L.	Glenwood
Watson, J. A.	Springville
White, M. S.	Hamilton
Whitman, C. R.	Tuscumbia
Wilson, L. E.	Birmingham
Zimmerman, A. S.	Scottsboro

Doctors Acker, Guice, Thomas and Walker were Life Counsellors. Dr. McLester was a Life Counsellor, President of the Association in 1920, a member of the State Board of Censors from 1928 to 1935, and in 1935 the 88th President of the American Medical Association. Doctor Partlow was President of the Association in 1918 and a member of the State Board of Censors from 1918 to 1934 and from 1936 to 1947. He, too, was a Life Counsellor, as was Dr. Sledge who served as President of the Association in 1938, and as

a Censor 1923 to 1926. Doctors Dixon, Harper and Salter were Active Counsellors.

Dr. T. R. Marvin lost his life in an automobile accident in Japan while in the service of his country.

THE FIFTY YEAR CLUB

This year marks the culmination of fifty years of practice of 29 of our colleagues in the profession, and, according to custom, they will be awarded certificates of distinction immediately after the Jerome Cochran Lecture tomorrow morning. They are:

David G. Andress	Madrid
Norman L. Broach	Pine Level
Eugene Callaway	Selma
Frank L. Chenault	Decatur
John W. Crowder	W. Blocton
William D. Fonville	Pasadena, Calif.
John E. Garrison	Birmingham
William G. Hairston	Birmingham
Robert E. Hale	Bellamy
Hugh W. Hill	Carrollton
Henry L. Horsley	Boaz
Urban L. Jones	Brooklyn
Lucien Tennent Lee	Selma
Thomas M. Littlepage	Butler
Richard S. Lucius	Eutaw
David A. Mason	Selma
Joseph C. McDaniel	York
William C. Minnich	Mobile
Charles M. Nice	Birmingham
William L. Orr	Ozark
Albert M. Richards	Mt. Vernon
Edmond W. Rucker	Birmingham
Walter F. Scott	Birmingham
James H. Sentell	New Hope
Charles S. Strock	Verbena
Thomas F. Taylor	Tuskegee
William A. Thompson	Citronelle
Oscar O. Underwood	Phil Campbell
John S. Williamson	Verbena

A posthumous award is to be made the family of Dr. Earle E. Taylor of Crichton Station, Mobile, who would have received his certificate at this meeting had death not intervened.

PRESIDENTIAL APPOINTMENTS

Drs. J. Paul Jones and D. G. Gill were appointed by President Morgan to succeed themselves as delegate and alternate, respectively, in the House of Delegates of the American Medical Association, their new terms to expire December 31, 1955.

At the last annual session the State Board of Censors authorized the appointment of a special committee to give consideration to problems arising in connection with the medical care program of the United Mine Workers of America, the committeemen to come from counties involved in the program. On the committee were

appointed E. Bryce Robinson, Jr., Chairman; A. C. Jackson, Walter C. McCoy, T. J. Payne, Harold E. Simon and Charles H. Wilson.

Committee appointments were made as follows: Medical Service and Public Relations—J. G. Daves and A. C. Gipson; Mental Hygiene—Frank A. Kay; Maternal and Child Health—Thos. C. King, Jr.; Cancer Control—A. E. Casey; Blindness and Deafness—Karl Benkwith; Postgraduate Study—A. J. Treherne; Physician-Druggist Relationships—B. Frank Jackson, Jr.; Anesthesiology—Alfred Habeeb; Tuberculosis—W. J. Talley; and Industrial Medicine—W. G. Thuss.

#### STATUS OF COUNSELLORS-ELECT

Last year, seven members were elected Counsellors—R. J. Guest, Jr., Gayle T. Johnson, G. E. Newton, L. L. Parker, J. Donald Smith, Alfred J. Treherne, and William E. Wilson. They have qualified as required by the Constitution of the Association and are to be added to the Roll of Active Counsellors when the revision of the Rolls is made on Saturday morning.

#### OFFICERS TO BE ELECTED

Officers to be elected at this session are a President-Elect, a Vice-President for the Northeastern Division to succeed Dr. Hugh Gray whose term has expired; and two Censors for five years to succeed Drs. E. G. Givhan, Jr. and J. D. Perdue whose terms expire.

There are to be elected, also, 22 Counsellors: From the 2nd Congressional District, 2. W. R. Carter is to be elevated to Life Counsellor; D. G. Gill's first term of seven years has expired. Third District, 4. P. P. Salter is deceased; C. T. Jones has resigned; G. R. Smith is to be elevated to Life Counsellor; E. L. Gibson's second term of seven years has expired. Fourth District, 6. Duncan Dixon and W. F. Harper are deceased. J. F. Alison and W. M. Salter are to be elevated to Life Counsellors; the second terms of seven years of J. F. Sewell and G. G. Woodruff have expired. Fifth District, 2. J. O. Finney's first term of seven years has expired; A. L. Isbell's second term of seven years has expired. Sixth District, 2. M. H. Eskew is to be elevated to Life Counsellor; J. P. Collier's second term of seven years has expired. Seventh District, 2. B. W. McNease's first term of seven years has expired; A. C. Jackson's second term of seven years has expired. Eighth District, 3. H. M. Simpson has resigned; the first terms of seven years of H. A. Darby and W. G. McCown have expired. Ninth District, 1. W. A. Clyde's first term of seven years has expired.

#### APPOINTMENTS TO BE MADE

Committees presenting vacancies because of expiration of term of members are Medical Service and Public Relations (J. P. Chapman and J.

Paul Jones); Mental Hygiene (J. S. Tarwater); Maternal and Child Health (T. M. Boulware); Cancer Control (F. H. Craddock, Jr.); Blindness and Deafness (R. J. Grayson); Postgraduate Study (Ralph McBurney); Physician-Druggist Relationships (R. E. Cloud); Anesthesiology (W. P. May); Tuberculosis (L. O. Davenport), and Industrial Medicine (E. A. Isbell).

It will be a responsibility of the next President to make appointments to fill these vacancies, and to name a delegate and an alternate to the American Medical Association to succeed Drs. C. A. Grote and E. Bryce Robinson, Jr., respectively, whose terms will expire December 31, 1954.

#### ASSOCIATION FINANCE

The accounts of the Association for the year 1953 have been audited by Crane, Jackson and Wilson, Certified Public Accountants of Montgomery, and the audit constitutes the concluding pages of this report.

The Officers and Members,  
The Medical Association of the State of Alabama,  
Montgomery, Alabama.

Gentlemen:

We have examined the cash accounts of the Treasurer of the Medical Association of the State of Alabama for the calendar year 1953, and have prepared the following statements therefrom:

*Exhibit "A":* Summary Statement of Cash Receipts and Disbursements for the Calendar Year 1953.

*Exhibit "B":* Statement of Cash Disbursements for the Calendar Year 1953.

*Exhibit "C":* Securities owned at December 31, 1953.

Our examination included the tracing of all recorded cash receipts to the bank statements, and the vouching of all returned cancelled bank checks to the record of disbursements. Cancelled bank checks were also examined as to amount, signature and endorsement. Records of receipts and disbursements were proved for mathematical accuracy. Cash balances were independently confirmed with the depository.

Securities owned by the Association, detailed in Exhibit "C", were verified by physical examination on February 5, 1954, at the Safety Deposit Vault of the First National Bank of Montgomery.

Respectfully submitted,  
Crane, Jackson and Wilson,  
By H. C. Crane, C. P. A.

EXHIBIT "A"

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA  
SUMMARY STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS  
FOR THE YEAR ENDED DECEMBER 31, 1953

Cash Balance—January 1, 1953:

Checking Account—First National Bank .....	\$22,586.52	
Savings Account—First National Bank .....	1,492.56	\$24,079.08

Cash Receipts:

Association:

County Dues .....	\$24,169.50	
Counsellors .....	2,360.00	
Refunds for postage, telephone, etc. from the Medical Service and Public Relations Com- mittee .....	495.05	
Sale of Association Rosters .....	76.50	
Interest on Savings Account .....	14.96	\$27,116.01

Journal:

Advertising .....	\$11,657.99	
Cooperative Medical Dividend .....	615.54	
Refund Printing Expenses .....	132.89	
Non-Member Subscriptions and Sales .....	93.90	12,500.32
American Medical Association Dues .....	19,437.50	\$59,053.83

Cash Disbursements (Exhibit "B"):

Association .....	\$ 4,792.52	
Medical Service and Public Relations Committee .....	18,476.04	
Journal .....	14,388.15	
American Medical Association Dues .....	19,437.50	57,094.21
Excess of Receipts over Disbursements .....		\$ 1,959.62

Cash Balance—December 31, 1953:

Checking Account—First National Bank .....	\$24,531.18	
Savings Account—First National Bank .....	1,507.52	\$26,038.70

EXHIBIT "B"

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA  
STATEMENT OF CASH DISBURSEMENTS  
FOR THE YEAR ENDED DECEMBER 31, 1953

Association:

Salaries:

Douglas L. Cannon .....	\$ 600.00	
Clerical .....	10.00	\$ 610.00
Printing and Mailing 1953 Transactions .....		1,678.28

Annual Meeting:

Printing and Mailing Programs .....	\$ 252.75	
Convention Hall .....	208.85	
Projection Service and Slides .....	160.25	
Badges .....	148.25	
Speakers' Expenses .....	97.29	
Employee Expenses .....	78.88	946.27

Expenses of Delegates to Meeting of American Medical Association .....	731.37	
Other Printing and Stationery Costs .....	415.71	
Postage .....	108.00	
1953 and 1954 Conference of Presidents Dues .....	100.00	
Expenses of Dr. Cannon to A. M. A. Committee Meeting .....	70.57	
Audit Fee .....	60.00	
Fidelity Bond—Treasurer .....	50.00	
Lettering Fifty Year Club Certificates .....	11.50	
Safety Deposit Box Rental .....	6.00	
Bank Exchange .....	4.82	\$ 4,792.52

Medical Service and Public Relations Committee:

Salaries:			
W. A. Dozier, Jr.	\$ 6,600.00		
Emmett Wyatt, Jr.	2,700.00	\$ 9,300.00	
Travel Expense—W. A. Dozier, Jr.		2,850.00	
Printing and Stationery Costs		2,672.25	
Postage and Postal Meter Rental		1,365.72	
Office Rental		960.00	
Telephone and Telegraph		474.72	
Radio Work and Tapes		335.85	
Office Supplies and Expense		276.80	
Payroll Taxes		94.50	
Subscriptions		64.40	
Newspaper and Photographic Service		48.05	
Copies of Testimony—Chiropractors Case		33.75	18,476.04

Journal:

Salaries:			
Douglas L. Cannon, M. D.	\$ 600.00		
William W. Wilkerson, M. D.	25.00		
Lurette Kilpatrick	1,020.00	\$ 1,645.00	
Printing and Mailing Journal		12,743.15	14,388.15
American Medical Association Dues			19,437.50
Total Disbursements			\$57,094.21

EXHIBIT "C"

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA  
SECURITIES OWNED  
DECEMBER 31, 1953

Quantity	Description	Date of Issue	Purchase Price	Redemption Value 12-31-53	Increase	Date of Maturity	Maturity Value
7	\$500.00 Series "F" U. S. Government War Savings Bonds No. D191057F to No. D191063F	7-1-43	\$ 2,590.00	\$ 3,251.50	\$ 661.50	7-1-55	\$ 3,500.00
6	\$500.00 Series "F" U. S. Government War Savings Bonds No. D220060F to No. D220065F	1-1-44	2,220.00	2,742.00	522.00	1-1-56	3,000.00
4	\$500.00 Series "F" U. S. Government War Savings Bonds No. D274010F to No. D274013F	6-1-44	1,480.00	1,828.00	348.00	6-1-56	2,000.00
3	\$500.00 Series "F" U. S. Government War Savings Bonds No. D385709F to No. D385711F	5-1-45	1,110.00	1,330.50	220.50	5-1-57	1,500.00
11	\$500.00 Series "F" U. S. Government War Savings Bonds No. D386331F; No. D386367F to No. D386369F; No. D386371F; No. D386373F to No. D386376F; No. D386378F and No. D386379F	11-1-46	4,070.00	4,664.00	594.00	11-1-58	5,500.00
3	\$500.00 Series "F" U. S. Government War Savings Bonds No. D677782F to No. D677784F	5-1-49	1,110.00	1,179.00	69.00	5-1-61	1,500.00
2	\$1,000.00 Series "F" U. S. Government War Savings Bonds No. M1510584F and No. M1510585F	5-1-49	1,480.00	1,572.00	92.00	5-1-61	2,000.00
1	\$10,000.00 Series "F" U. S. Government War Savings Bond No. X355045F	5-1-49	7,400.00	7,860.00	460.00	5-1-61	10,000.00
			\$21,460.00	\$24,427.00	\$ 2,967.00	\$29,000.00	

*Report of Vice-President Hugh Gray*

Northeastern Division

The annual Division meeting was held at the Y. M. C. A., in Anniston, on October 21, 1953. The Calhoun County Medical Society and Woman's Auxiliary were hosts to the respective members of their divisions. The meetings were unusually well attended.

The highlights of the program were talks by Dr. W. B. Frommeyer, Assistant Professor of Medicine, Medical College of Alabama, and Dr. Alton Ochsner, Professor of Surgery, Tulane Medical School. The whole scientific program was excellent.

The Auxiliary members of the Division had their meeting at the Anniston Country Club.

After the scientific meeting, the members of the Division, their wives and guests met at the Anniston Country Club for a social hour followed by an enjoyable dinner.

The Vice-President wishes to thank each member of the host Society for a pleasant and instructive meeting.

A number of members from this region attended the open meeting in Montgomery concerning the Chiropractic Bill.

I was elected to fill the unexpired term of Dr. J. O. Finney which I understand was for 1953. I wish to express my appreciation for the honor of representing the Northeastern Division. It was a pleasure to meet and work with the members of that group.

*Report of Vice-President Windham*

Southeastern Division

The Southeastern Division of the Association continues to attract young, enthusiastic, and well trained physicians to practice in the area. Hospital facilities also continue to be improved and the standard of work performed by men in the area is a credit to medicine in Alabama. The much discussed shortage of physicians does not apply to this Division. Not only are the smaller towns and communities getting their share of men for general practice but the larger cities and towns are well staffed with specialists. One of the most encouraging things about our Division is the interest shown by physicians in professional meetings and postgraduate seminars.

The Division held one meeting this year. This was sponsored by the Pike County Medical Society and was held in Troy on March 4, 1954. It was well attended. The professional program was excellent and the entertainment, food, and fellowship were superb. The physicians who were responsible for this meeting deserve heartiest congratulations.

With the increasing importance of the State Medical School in medical practice in the state, I would recommend that we follow the example that is set by the Dental School in postgraduate training for the physicians in Alabama. A diversified program could be arranged for special interests. These could be in the form of seminars

on special subjects. I believe the sessions would be well attended and would contribute to medicine in Alabama.

*Report of Vice-President Payne*

Northwestern Division

A highly successful scientific meeting was held at Florence October 15. An interesting program was presented and the attendance was good. Following the program we joined the members of the Auxiliary for a fellowship hour and dinner. We are indebted to the Lauderdale County Society for being our host to this very fine meeting.

Upon an invitation from the Alabama Pharmaceutical Association I made a talk on November 18 at the Pharmacy Seminar in Birmingham on Physician-Druggist Relationships. Oddly enough, my brother, who is First Vice-President of the Pharmaceutical Association represented the druggists in this discussion. I feel that it was profitable to both.

I was recently appointed by the president of the Association to the Legislative Affairs Committee of the American Medical Association from the Seventh Congressional District. I attended a regional meeting of the Committee in Atlanta in January. Alabama was well represented and I am sure all of us have a better understanding of legislative affairs as they pertain to medicine. Several letters have been written to my Congressman and our Senators since this meeting.

I serve as public relations officer for my County Medical Society. Recently we presented the recordings "Your Physician Speaks" over our local radio station. I wish to thank the Committee on Medical Service and Public Relations for preparing the recordings. I am sure the lay public will benefit from their presentation.

And now I have a few recommendations to make. I have felt for a long time there should be some means of promoting or encouraging better attendance at County Medical Society meetings. During the past year several members of the Association have expressed the same opinion. Many of our members enjoy the privileges and benefits of organized medicine and membership in the Association and never attend meetings. The County Medical Societies and the State Association need and should have the help and interest of all members. If all members attended regularly, they could better understand our problems and help more in solving them. It is my opinion that members should be required to attend more than 50% of the county meetings without good excuse for absence if they remain in good standing. I strongly urge the Board of Censors to study this problem.

It has been my privilege to serve on a special committee appointed by the president to study the U. M. W. A. Welfare and Retirement Fund's program relating to the purchase of medical care in Alabama. Dr. E. Bryce Robinson, Fairfield, has served as chairman of the Committee and several meetings have been held. A full report will be furnished by the chairman and I recommend that a standing liaison committee be ap-

pointed by the president. I am sure that many problems may be prevented and others solved by this committee's contact with the area medical administrator.

The shortage of trained nurses is progressively becoming more acute. I again urge a joint meeting of representatives of the medical and nursing professions in an effort to improve the condition.

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*Report of Vice-President Carter*  
Southwestern Division

The fall meeting of the Southwestern Division was held in Evergreen November 12, 1953. The Conecuh County Medical Society acted as host. The following scientific program was most illuminating, enjoyable and profitable:

Cystitis in the Female—Doctor Charles Eberhart, Atlanta.

Heart Disease in Pregnancy—Doctor William J. Atkinson, Mobile.

A Review of Procedures in Office Gynecology—Doctor Perry Thomas, New Orleans.

Pediatric Surgery—Doctor Charles Holloway, Atlanta.

Management of Traumatic Injuries—Doctor Neal Owens, New Orleans.

During the scientific session a meeting of the Woman's Auxiliary of the Southwestern Division was held at the Evergreen Community House.

Immediately following the papers and the meeting of the Auxiliary a most delicious barbecue chicken dinner, plus all accessories, was served to everyone present. In making this report I wish to thank again my fellow members of the Conecuh County Medical Society and their wives who so graciously made this most enjoyable meal possible.

The papers were most excellent and the supper was delicious but the attendance was disappointing and discouraging. Due to the lack of interest I wonder if it is wise to continue the divisional meetings.

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*Message of the President*

Acting as your President for the past year has indeed been a wonderful experience and pleasure. The honor and privilege are greatly appreciated. The fine leadership this organization has had in the past caused me to feel humble and I accepted the office of President with considerable apprehension and many misgivings, but the fine support given me soon dispelled many of the forebodings. The year I had as President-Elect was a great aid in at least partially preparing me to serve as President.

I know that we are all happy to have the opportunity again of meeting in Mobile. Allow me, at this time, to thank the Mobile County Medical Society and the various committees for their assistance in putting on this meeting. Unfortunately, this year, the time of our meeting and Holy Week coincided but circumstances were

such that it was unavoidable. In spite of this conflict our host has been very understanding and cooperative.

During this year I feel that the work of the Association has gone along in a satisfactory manner. As usual the Board of Censors, under the leadership of its efficient Chairman, has rendered a fine service to the organization and the citizens of the state.

The Vice-Presidents have been very active, and excellent meetings have been held in each of the four districts. In my opinion, these meetings are very helpful, not only from a scientific standpoint but also because they bring the physicians of the respective districts together so that they become better acquainted, which in turn engenders a spirit of cooperation.

The various committees have taken their work seriously. They have all rendered their prescribed duties in an efficient and satisfactory manner. On behalf of the Association I wish to extend to them my commendation and thanks.

Since our relationship to the public is so important to all physicians I feel that I should make some remarks on the work of the Committee on Medical Service and Public Relations. That the Association was wise in giving this Committee a full time secretary and funds for carrying on its work is now becoming evident. During this year it has taken under consideration many serious problems and handled them in an efficient manner. It is now giving much time and study to some problems which, I am sure, when solved will be a satisfaction to the Association and a benefit to the citizens of the state.

Our State Health Officer, Dr. Daniel G. Gill, continues to render excellent service to the Association and to the state as a whole. We are very fortunate to have a man of his ability in this office.

Dr. Douglas L. Cannon, Secretary-Treasurer, has carried out his duties in his usual fine fashion and in addition has been of inestimable aid to me during this administration. He gave unstintingly of his advice and valuable opinions. To him I wish to extend my sincere thanks.

It is to our advantage to have capable men represent us in the American Medical Association. I know we all appreciate their good work and in keeping us informed of the activities of the House of Delegates.

The Woman's Auxiliary continues to grow and render more service. Its work in public relations, nurse recruitment, legislation, improving the relationship among doctors, and other activities has been most helpful. I am looking forward to the day when every doctor's wife in Alabama will be an Auxiliary member.

I feel sure that every physician now believes that voluntary health insurance holds an important place in the economy of our state, and nation. This has probably been one of the greatest factors in defeating the threat of compulsory health insurance. While it is true that a large percentage of our population has not availed itself of this type of insurance, the public is being

rapidly sold on the idea and during the past year great strides were made.

The Blue Cross-Blue Shield Plan of Alabama, as you know, is sponsored by the Alabama Hospital Association and the Medical Association of the State of Alabama. This plan is being operated efficiently, is growing satisfactorily, and is rendering an excellent service to our physicians, the hospitals, and the public. It is true that Blue Cross-Blue Shield does not provide "comprehensive" benefits and so far as I know there is no insurance plan that does, whether it be Blue Cross-Blue Shield or commercial. To the present time there has been no evidence that the public generally is ready to pay the cost of "comprehensive" benefits. However, our plan in Alabama is gradually increasing its benefits and I understand these will continue to be increased as experience justifies.

It is felt by some that participating agreements, whereby doctors agree to accept the Plan's fee schedule as full payment for services rendered in the low income group, would improve public relations and be of benefit to all concerned. It is possible that certain adjustments in the fee schedule will make such participation acceptable. I understand that such agreements are now in effect in the majority of the 77 plans in our nation.

One of the greatest problems which has confronted this Association during the past few years is that of irregular practitioners. A very important duty of our organization is to see that the public is protected from a health standpoint and that only qualified practitioners are allowed to practice. This duty was delegated to us by the State Legislature. The General Assembly was so impressed by the Medical Association, organized under the leadership of the illustrious Jerome Cochran, that in the year 1875 it constituted this Association the State Board of Health and charged it with the supervision of the health interests of the people of the state. So far no session of the Legislature has seen fit to change it.

On several occasions groups of irregular practitioners have attempted to set up their own licensing boards but each time the Legislature has taken the advice of our Association. These groups are getting stronger and each time their attempts to get their own licensing board become more difficult to defeat. It is my opinion that the situation is perilous. At the present time a committee is working on this problem and from the progress it is making I am hopeful that a satisfactory solution can be worked out.

The Workmen's Compensation Law of Alabama provides a maximum of \$500 to take care of all expenses associated with injuries sustained by employees. This law was enacted several years ago before inflation had reached its present proportions. In a majority of cases this maximum amount is not even needed, but quite often it is entirely inadequate. On many occasions, in seriously injured patients, the hospital expenses alone cannot be paid from the total maximum amount allowed. This situation is unjust both to hospitals and physicians.

The Alabama Hospital Association is now giving consideration to this inequitable state of af-

fairs and is planning to try to get this corrected at the next session of the Legislature. It is my opinion that our Association should also take cognizance of this situation and give its support to the efforts of the Hospital Association.

I am sure all of us are very proud of our Medical College. Every year now it is graduating a fine group of young physicians. The College has many problems, but none that time, proper management, and financial support cannot correct. It is the duty of this Association and every individual member to lend wholehearted support to the College.

In this connection I should like to call your attention to the American Medical Education Foundation. A few years ago, when inflation became fairly marked, medical colleges throughout our nation began to find themselves in financial difficulties. There was considerable talk of getting the Federal Government to subsidize the medical schools. It was felt, however, by our medical leaders that what the Government subsidized it also controlled. They conceived the idea of aiding the colleges by individual donations and finally the American Medical Education Foundation was organized, its function being to collect donations and distribute the funds to the colleges.

During the year 1952 a substantial amount was collected. From Alabama, however, only \$2,474.-50 was donated. When the 1952 funds were distributed the Medical College of Alabama received \$22,712.50. During last year considerably more progress was made nationwide, but Alabama did not do as well as we had hoped.

The doctors are not alone in their interest in this fund. Business and industrial leaders have contributed liberally of their time and money to this cause. In 1953 business and industry throughout the country donated \$1,367,979.00 and this group in Alabama contributed \$3,600.00. To these business leaders we are due a debt of gratitude and should solicit their continued efforts to keep our medical schools free, solvent and progressive.

Last year one of our County Medical Societies made a liberal donation to this fund, in addition to contributions made by individual members; and another Society passed a resolution in which all its members were requested to contribute. I should like to recommend that a state committee be appointed to aid this worthy cause and that each County Society be urged to appoint a similar committee.

For sometime I have been interested in group insurance. Knowing of the inability of several physicians to get health insurance on account of past medical history, and being impressed by the very marked increase in premiums on malpractice insurance, prompted me to investigate these insurance features.

During the past several months I have given considerable study to the programs of health, accident and malpractice insurance for physicians which have been adopted by a number of medical organizations. As a result I am convinced that a well designed program for our Association would be very advantageous.

Group coverage may be made available which will insure all active practicing physicians to

age 70 irrespective of past medical history and over-age for individual purchase. There are never riders excluding coverage for recurrent ailments. The cost is 35 to 40 per cent less than that obtained by individual purchase.

Recently the cost of malpractice insurance has increased substantially, apparently out of proportion to the increase of costs in general. Some companies have discontinued the sale of this type of insurance in some of the industrial countries. This has placed a number of our members at a disadvantage.

I have found that group malpractice insurance can be obtained from one of the largest and best known companies and can be made available to all members of our Association at a much lower cost than we can get it individually.

The foregoing does not recite all the advantages of group insurance but it is sufficient to indicate the greater coverage and security provided by mass purchase.

I should like to recommend that a committee be appointed to study this type of group insurance and instructed to report its findings and recommendations to the Association through the Board of Censors.

Again, allow me to express my appreciation for the great privilege of serving this Association as President. I shall always have this organization at heart and trust that I shall have the opportunity of rendering service for several years to come.

#### *Scientific Program*

Dr. William L. Smith, Montgomery, discussed the Diagnosis of Diabetes Mellitus.

Dr. John F. Crosby, Jr., Mobile, read a paper on Trauma About the Face.

The Management of Peripheral Arterial Injuries was dealt with by Dr. Frederick W. Smith, Huntsville.

Dr. J. S. Tarwater, Superintendent, Alabama State Hospitals, Tuscaloosa, presented a paper on Mental Health in Alabama.

#### **Afternoon Session, Thursday, April 15th 2:00 P. M.**

Dr. Amos C. Gipson, Gadsden, discussed Hormones and Body Water.

Dr. John E. Moss, Mobile, outlined the Management of Bronchopulmonary Diseases in Private Practice.

Abnormal Uterine Bleeding was the subject of the presentation of Dr. Willard M. Allen, Washington University School of Medicine, St. Louis.

The afternoon's program was concluded with a panel discussion of Thrombo-Embolic Disease and Its Complications, with Dr.

Champ Lyons, Professor of Surgery, Medical College of Alabama, Birmingham, acting as moderator. Participants were Drs. Walter B. Frommeyer, Sterling Edwards, and Arthur I. Chenoweth, all of Birmingham.

#### **Miscellaneous Business**

The Secretary of the Association read resolutions that had been submitted by the Lee and Marion County Medical Societies. They will be found in the proceedings of the last day.

Dr. Lamar Arrington, Meridian, was presented as Mississippi's fraternal delegate.

#### **Social Events**

The Mobile County Medical Society entertained the Association and guests at a buffet supper and dance at the Country Club.

#### **Second Day Friday Morning, April 16th 9:00 A. M.**

Dr. Waldo E. Nelson, Professor of Pediatrics, Temple University Medical School, Philadelphia, discussed Pediatric Care by the General Practitioner.

Dr. Thomas C. Donald, Jr., Anniston, presented a paper on Management of Anemia in General Practice.

The Doctor as an Individual was the subject dealt with by Mr. M. L. Meadors, Executive Secretary and Counsel of the South Carolina Medical Association, Florence.

Dr. J. Robert Willson, Professor of Obstetrics and Gynecology, Temple University School of Medicine, Philadelphia, presented a paper on Care of the Premature Baby During Labor and Delivery.

The Jerome Cochran Lecture—Operations for Coronary Disease—was delivered by Dr. Claude S. Beck, Professor of Cardiovascular Surgery, Western Reserve University School of Medicine, Cleveland.

President Morgan awarded Certificates of Distinction to the following physicians of Alabama who had been practicing their profession for fifty years:

David G. Andress  
Norman L. Broach  
Eugene Callaway  
Frank L. Chenault  
John W. Crowder  
William D. Fonville  
John E. Garrison  
William G. Hairston  
Robert E. Hale  
Hugh W. Hill

Henry L. Horsley  
Urban L. Jones  
Lucien Tennent Lee  
Thomas M. Littlepage  
Richard S. Lucius  
David A. Mason  
Joseph C. McDaniel  
William C. Minnich  
Charles M. Nice  
William L. Orr

Albert M. Richards  
Edmond W. Rucker  
Walter F. Scott  
James H. Sentell  
Charles S. Strock

Thomas F. Taylor  
William A. Thompson  
Oscar O. Underwood  
John S. Williamson

A posthumous award was made the family of Dr. Earle E. Taylor, recently deceased, who was to have received his Certificate at this meeting.

#### Miscellaneous Business

The Secretary of the Association announced vacancies as follows in the College of Counsellors:

2nd Congressional District—2. W. R. Carter is to be elevated to Life Counsellor; D. G. Gill's first term of seven years has expired.

3rd Congressional District—4. P. P. Salter is deceased; C. T. Jones has resigned; G. R. Smith is to be elevated to Life Counsellor; E. L. Gibson's second term of seven years has expired.

4th Congressional District—6. Duncan Dixon and W. F. Harper are deceased; J. F. Alison and W. M. Salter are to be elevated to Life Counsellors; the second terms of seven years of J. F. Sewell and G. G. Woodruff have expired.

5th Congressional District—2. J. O. Finney's first term of seven years has expired; A. L. Isbell's second term of seven years has expired.

6th Congressional District—2. M. H. Eskew is to be elevated to Life Counsellor; J. P. Collier's second term of seven years has expired.

7th Congressional District—2. B. W. McNease's first term of seven years has expired; A. C. Jackson's second term of seven years has expired.

8th Congressional District—3. H. M. Simpson has resigned; the first terms of seven years of H. A. Darby and W. G. McCown have expired.

9th Congressional District—1. W. A. Clyde's first term of seven years has expired.

Counsellors and Delegates from these Congressional Districts met at 12:15 P. M. on this day for the purpose of making nominations to fill the vacancies.

#### Afternoon Session

Friday, April 16th

2:00 P. M.

Dr. David Carroll, Assistant Professor of Radiology, University of Tennessee College of Medicine, Memphis, read a paper on Radiation Therapy as Relates to General Practice.

Dr. T. J. Bender, Jr., Mobile, with Dr. E. Crampton Harris, Jr., also of Mobile, as joint author, discussed the Mechanical Basis of Low Back Pain.

Cryptorchism was the subject of the discussion engaged in by Dr. Lloyd Lewis, Pro-

fessor of Urology, Georgetown University School of Medicine, Washington, D. C.

A panel discussion of Arthritis concluded the afternoon's program. The moderator was Dr. J. O. Finney, Gadsden, and the participants Dr. Howard L. Holley, Birmingham, Dr. John M. McMahon, Bessemer, and Dr. F. F. Schwartz, Birmingham.

(To be concluded)

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**Voluntary Health Insurance**—Recent and encouraging developments in the increasing availability of insurance against expensive illnesses are among the most outstanding advances in voluntary health insurance.

This coverage, coming to be known as "major medical and hospital expense insurance," now protects more than one million persons, and the number is growing rapidly. Dr. Edward J. McCormick, Toledo, president of the American Medical Association, stated in discussing voluntary health insurance in the April 24th Journal of the American Medical Association.

"This type of insurance is being written both in individual and group plans, with benefits extended to dependent family members," Dr. McCormick wrote. "Reimbursable under this type of insurance are fees of surgeons and physicians, private duty nursing, all types of hospital expense, cost of drugs, medicaments, supplies, equipment, prosthetic appliances, physiotherapy, anesthesia, roentgenograms, laboratory tests, and many other items.

"Major medical and hospital expense policies are written somewhat like automobile collision insurance with deductible provisions ranging from \$100 to \$500. Maximum benefits are from \$2,500 to \$10,000. In order to keep premium rates moderate by encouraging the insured to get only necessary medical services, most insurers today agree to pay 75 to 80 per cent of expenses over the deductible amount, with the patient paying the remaining 20 or 25 per cent."

One of the greatest stories of our times in the health field is the remarkable voluntary effort by 100 million Americans to protect themselves against the economic burden of sickness and accidents, Dr. McCormick said, adding:

"The growth in the field of voluntary health insurance has been phenomenal. In 1941 only 16 million persons had protection against hospital and medical expenses; now there are nearly 100 million.

"In 1952 more than two billion dollars in benefit payments were distributed to the holders of health and accident insurance policies. The total does not include large sums paid under sick leave programs, union-administered plans, and employee mutual benefit associations.

"This should be an effective answer to those who still clamor for a program of compulsory national health insurance because they assume we are all living on the verge of poverty and cannot take care of our medical needs without federal assistance.

"Nothing has been so exaggerated by politicians and others than the medical needs of our people."

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## STATE DEPARTMENT OF HEALTH

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### BUREAU OF ADMINISTRATION

D. G. Gill, M. D.

State Health Officer

### BATS, ANIMALS AND RABIES

In June 1953 a yellow bat attacked a seven-year-old boy near Tampa, Florida. That was an unusual occurrence, for bats normally are more inclined to fly away from humans than to attack them. This strange conduct caused someone to kill the bat and try to find out what was wrong with it. The brain was sent to the Tampa regional laboratory for examination, and the senior bacteriologist there reported that it contained the Negri bodies characteristic of rabies. This positive diagnosis was later confirmed by the Jacksonville laboratory of the Florida State Board of Health. A second confirmation was made, by a different procedure, by the U. S. Public Health Service's Virus and Rickettsial Laboratory in Montgomery.

Unfortunately, that three-times-made diagnosis had an importance extending far beyond that seven-year-old Florida youngster and his family. Actually, it marked a significant milestone in public health throughout the country, for that was the first time bat rabies had ever been discovered in the United States.

Rabies involving dogs, foxes and a few other animals has long been a serious matter, of course, especially in Alabama. But there seemed to be solid basis for the hope and belief that there was no likelihood of one's being bitten by a rabid bat anywhere north of the Rio Grande, although rabies has been known for some time to have been prevalent in vampire bats in Mexico. Bat rabies there has been studied by a number of health workers from the United States. Among them was Dr. Harald Johnson, at that time in charge of what was then the Rockefeller rabies laboratory, in Montgomery. But, as already indicated, the bats found in the United States were believed to be rabies-free.

A disturbing fact faced public health workers and others when it became indisputable that a Florida bat, of a different

species from the vampire bat of Mexico, had had rabies: This invasion potentially exposed millions of other bats to the disease. The chain of infection might extend on and on. Florida bats might infect Alabama bats. And, after infecting other Alabama bats, Alabama humans and Alabama animals, they might easily infect Georgia, Tennessee and Mississippi bats. And thus rabid bats, each at least potentially capable of giving the dread disease to humans and animals, might appear in state after state.

Another disturbing problem faced the doctors and others whose job it is to protect humans and animals against rabies: Whenever a fox, dog, or other animal gets rabies, it is dangerous for only a comparatively short time. For this is normally a rapidly fatal disease. And dead animals cannot bite and infect other animals or humans. But vampire bats at least have a peculiar immunity to rabies. It often is not fatal to them. They live indefinitely with it. And, as long as one lives, it is capable of giving rabies to animals and humans.

That seven-year-old Florida lad's experience, it turned out, was just the beginning. Sometime later members of the staff of the Florida State Board of Health found rabies virus in the brains of five yellow bats and one Seminole bat. They did not act as though they were rabid and gave no other indications that there was anything wrong with them. The first species just mentioned of course was the same as that represented by the first rabies-infected bat to be discovered. Both differ from the vampire, or blood-sucking, bats of Mexico in that they live on insects.

About three months after that Florida boy's unfortunate experience, a physician on the staff of the Pennsylvania State Department of Health announced that proof of rabies had been found in the brain of a bat which had attacked a woman near Carlyle, in that state. This diagnosis was also confirmed by another type of examination. Assuming that the infection had been transferred to her by the attack, health authorities recommended that she take the Pasteur treatment, and she did so. Latest reports

indicate that she did not develop rabies. Unfortunately, premature destruction of the carcass prevented identification of the species of bat involved. However, indications are that, like the others that have been mentioned, it was insectivorous.

As already indicated, the discovery of bat rabies in that Florida community did not bring the first news of the existence of bat rabies. It has been known for a long time. In 1908 there appeared in a narrow strip of land between the mountains and the sea in Brazil a peculiar form of illness affecting cattle. Its main characteristic was that it brought on paralysis. Examination of the brains of some of the animals dying from this strange illness revealed those characteristic Negri bodies, rabies' most reliable hallmark. Students of this condition noticed that the bats of that area were not acting as bats normally do. They, as most people know, are night-time travelers, staying in their caves and other hiding places in daylight. But those which were suspected of causing that 1908 epizootic were flying around in considerable numbers in broad daylight. And they were observed to be biting animals too. This caused farmers and others to associate these daylight-flying bats with that animal outbreak. This suspicion was strengthened when a number of animals known to have been bitten in that way developed this strange disease. For a time, however, dogs were regarded as being responsible for the cattle paralysis.

That suspicion of dogs, strengthened by occasional outbreaks of dog rabies, caused a strict dog quarantine to be imposed. It was conscientiously enforced too. Nearly 7,000 were killed in a single six-month period in 1912. But the dog quarantine had no noticeable effect upon that strange, paralyzing disease: Cattle continued to develop it. This directed suspicion away from dogs and caused a search to be made for other infecting agents. Other factors, which caused many to believe something else besides dogs was responsible, began to be considered. For one thing, most of the sick animals were found near forests, where they were less likely to encounter rabid dogs than they would be somewhere else. And, in the second place, rivers too wide for a dog to swim offered no defense against infection: Cattle beyond the reach of any dogs, rabid or not, were struck down like the others. This led to the theory that the infecting agent

probably was air-borne, that is, something which could fly. Suspicion began to center more upon bats when people noticed the strange behavior of many of them. Not only did they fly about in the daytime and attack animals, as already mentioned. They also began fighting among themselves. Even if they did not have rabies, there was certainly something wrong with them.

In 1916 another kind of bat—the kind that eats fruit—was captured in the act of biting cattle in the daytime. It was found to be rabid.

With this evidence added to that which had already been accumulated, those who had had a part in some or all of these experiments publicly proclaimed their belief that those animals in Southern Brazil had been infected with the rabies virus by being bitten by rabid bats.

Other cases of bat-transmitted rabies occurred from time to time in various parts of South America. Research workers in Brazil, Argentina and Paraguay agreed that this was the proper explanation for the outbreaks which continued to occur in cattle in that part of the world.

There was a measure of satisfaction in the knowledge that, up to that time, only animals had been infected with bat-transmitted rabies, as far as anybody knew. While it was disconcerting to consider the heavy financial loss that the death of so many animals would involve, it was comforting to feel that humans at least were safe from this mode of attack. But that satisfaction was eventually dissipated. For, in 1929, an epidemic involving a form of paralysis occurred in a village in Trinidad. Health workers made the disturbing discovery that this paralysis was due to rabies. Moreover, it was observed that large numbers of bats were darting suddenly from fruit trees and attacking humans, as well as animals. From these facts, it was strongly suspected that bats were actually transmitting rabies to both animals and humans. This strong suspicion was changed into virtual certainty in 1936 by a report covering additional studies.

Reference has already been made to bat rabies in Mexico. It was recognized there about 50 years ago. Farmers became concerned, as they were later to be in other countries, over the heavy loss of their cattle by a form of paralysis. In recent years it has been considered a major live stock dis-

ease problem in certain areas in that country. Indeed, we are told by Dr. Robert D. Courter, at least 10,000 cases occurred in cattle every year during the five-year period ending with 1943. That authority, who is assistant chief of the Veterinary Public Health Section of the U. S. Public Health Service's Communicable Disease Center, in Atlanta, pointed out in an article in Public Health Reports, a U. S. Public Health Service publication, that two men had isolated rabies virus from the salivary glands and brain of a paralyzed cow and from the brains of vampire bats found in the general area where cases of this strange paralytic disease had been prevalent. More recently, in 1953, cases of bat rabies were reported in areas of Mexico which theretofore had been free from it. Of particular concern to us in the United States is the fact that positive laboratory diagnoses have been made of the brains of bats caught in three Mexican states bordering on this country. There is sound reason to think that bat rabies now is present in most of Mexico.

Dr. Courter tells us that bat-disseminated rabies has also been found in Honduras and Venezuela.

How can this threat to us humans, now a reality on Alabamians' very doorsteps, be curbed? Let us turn again to Dr. Courter's article:

"Control activities should be directed toward the destruction of vampire bats or any other bats known to harbor and transmit rabies virus. Bat populations near villages or other thickly populated areas can be successfully limited by destruction of the colonies.

"Limiting the bat population in sparsely settled regions where livestock ranges over large areas is more difficult and, in some cases, almost impossible. In these areas, livestock may be protected, as is done in Mexico, by moving them 15 to 20 miles from an area in which bat rabies is occurring.

"Protection may be accomplished through bat-proofing homes and animal shelters. In some areas, bright lights have been used to keep vampires away."

Dr. Courter reminds us that, while the campaign against bat-transmitted rabies

should be concentrated upon the blood-feeding vampire bat, other kinds should not be overlooked. He points out that "measures for reducing their numbers should be included in any control campaign."

Fortunately, the protective power of immunization has been extended to this condition. Animals which cannot be kept out of the way of rabies-infected bats can be rendered immune to it by injection with rabies vaccine. Dr. Aurelio Malaga-Alba, rabies consultant to the World Health Organization, told in one of his reports of providing this protection to 3,500 Mexican cattle, without a single failure. Successful use of rabies vaccine was also reported from Honduras.

How serious a problem bat rabies will become in Alabama and the rest of the United States, there is no way of knowing. But our public health agencies are alert to its dangers. There is every reason to think they will deal with it successfully when and if the bat becomes an important factor in the rabies problem here.

## BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director

### SPECIMENS EXAMINED

February 1954

Examinations for diphtheria bacilli and Vincent's .....	157
Agglutination tests .....	895
Typhoid cultures (blood, feces, urine and other) .....	429
Brucella cultures .....	12
Examinations for malaria .....	85
Examinations for intestinal parasites .....	4,114
Serologic tests for syphilis (blood and spinal fluid) .....	24,720
Darkfield examinations .....	4
Examinations for gonococci .....	1,495
Examinations for tubercle bacilli .....	3,232
Examinations for meningococci .....	0
Examinations for Negri bodies .....	189
Water examinations .....	1,593
Milk and dairy products examinations .....	5,199
Miscellaneous .....	1,551

Total 43,675

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1954

	Jan.	Feb.	E. E.* Feb.
Typhoid and paratyphoid fever	5	5	3
Undulant fever	4	0	1
Meningitis	10	17	16
Scarlet fever	47	52	60
Whooping cough	47	32	94
Diphtheria	17	13	26
Tetanus	6	1	2
Tuberculosis	179	134	189
Tularemia	1	0	2
Amebic dysentery	3	1	2
Malaria	2	0	5
Influenza	1486	1441	2051
Smallpox	0	0	0
Measles	573	1430	346
Poliomyelitis	9	6	5
Encephalitis	1	0	1
Chickenpox	273	340	283
Typhus fever	2	2	2
Mumps	135	194	164
Cancer	458	389	253
Pellagra	0	1	2
Pneumonia	547	336	403
Syphilis	194	195	618
Chancroid	16	14	9
Gonorrhea	423	446	364
Rabies—Human cases	0	0	0
Positive animal heads	51	61	0

As reported by physicians and including deaths not reported as cases.

\*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF SANITATION

Arthur N. Beck, M. S. in S. E., Director

CONTROL OF INDUSTRIAL HYGIENE HAZARDS

Contributed by

Walter S. Davis, B. S., M. S.

Public Health Engineer

Sixty million Americans spend a third of their time at work; often at hot, foul, dusty, noisy, dangerous jobs. The welfare of their families, indeed the security of the nation, depends upon the health of these workers. For this reason, measures to improve the working environment aim primarily to serve the working man, whose health is his chief asset in his efforts to earn a livelihood. This aim is basic to a democratic policy, supported by industry, labor, and the general public. This policy has contributed in no small way to the growth of the vast market and enormous productive powers of American industry.

To implement this policy, industrial hygiene units have been set up in most of the forty-eight states, the District of Columbia, Puerto Rico, Hawaii and in many large cities and counties throughout the nation. Here in Alabama, the Division of Industrial

Hygiene operates under the Bureau of Sanitation and presently has a staff consisting of a director, an engineer, a chemist and a clerk-stenographer. The division offices and laboratories are located in the Public Health Building in Birmingham.

Before going further a definition of industrial hygiene is offered. Industrial hygiene is the science for the preservation of the health of the worker. The subject, therefore, involves primarily a program of health conservation and occupational disease prevention. An occupational disease is a disease arising out of and in the course of employment and is peculiar to an occupation or group of occupations.

Today there is a trend toward the broadening of industrial hygiene activities, under the term of occupational health, to include such factors as hours of work, fatigue caused by personal and environmental conditions, communicable diseases, mental health and personal hygiene. This concept may work in some of the larger industrial hygiene units; but could conceivably lead to overlapping and duplication of other health department functions.

The Alabama Industrial Hygiene Division is primarily concerned with the establishment of a healthy working environment and the prevention of occupational diseases and it is with this subject that the remainder of this article will be concerned. The establishment of a healthy working environment and the prevention of occupational diseases are the primary responsibilities of an engineer-chemist team. Since it is economically impossible for the engineer to control a contaminant absolutely, tolerance limits for most atmospheric contaminants have been adopted. Such tolerance limits are known as maximum allowable concentrations and are more often referred to as M. A. C.'s. The M. A. C. represents the amount of a substance to which the average individual may be exposed for 8 hours daily without significant harmful effects.

With this brief background, then, let us see how the industrial hygienist finds a suspected health hazard, how he determines the extent of the hazard, and how he controls the hazard.

Some suspected health hazards are brought to the attention of the Industrial Hygiene Division by local health departments, labor unions, insurance companies,

plant management, hospitals and individuals. Lacking sufficient requests from such sources, surveys are made of various industrial groups and areas in order to locate potential hazards for further studies. Several such surveys have been made recently, but have the disadvantage of being time consuming, and of locating only a minimum of potentially dangerous conditions for further study.

When a potentially hazardous condition has been located, the next step is to determine the extent of the hazard. In a large number of cases field instruments are available to determine quantitatively the concentration of the particular contaminant directly. In other cases it is necessary to collect atmospheric samples which are brought back to the laboratory for quantitative determination. In addition, biologic specimens are sometimes collected and these analyzed to show whether or not excessive absorption of the offending material has taken place.

When concentrations of the offending material in excess of the maximum allowable concentration are found or when biologic specimens show that an excessive amount of the contaminant is being absorbed, one or more of several control measures are recommended.

There are no set rules for the mechanical protection to be instituted in an attempt to control an industrial health hazard. The specific conditions encountered in each plant determine the type of protection to be employed. There are, however, certain basic principles for the minimization of industrial exposures. These are: (1) substitution, (2) change of process or operating method, (3) enclosure, (4) isolation, (5) dilution, (6) local exhaust ventilation, (7) personal protective equipment, and (8) housekeeping.

*Substitution:* Any material may be used safely regardless of the hazard it presents. The safe operation of plants engaged in the development of atomic energy furnishes conclusive proof of this. Nevertheless, wherever practicable, the substitution of a non-toxic (or less toxic) material for a more hazardous substance is the most desirable and simplest method for the elimination of a hazard. While this method cannot be employed frequently, the possibility of substitution should be the first control principle to be considered. Too often this

possibility is overlooked, and more elaborate and unnecessarily expensive control measures are installed.

Opportunities to substitute less toxic materials are often found in operations employing organic solvents. Benzol is extensively used in industry because of its excellent solvent properties. Its high toxicity necessitates such expensive control measures in some cases, however, that it is cheaper to use less efficient but less poisonous substitutes such as toluol, gasoline, or other petroleum fractions.

Titanium and zinc compounds have been used successfully to replace lead pigments, with a resultant elimination of the lead hazard in many painting operations.

The use of steel grit instead of sand in abrasive blasting has effected a significant reduction in silica dust exposures in the foundry industry. This industry has also benefited from the substitution of non-silica parting compounds for those high in silica.

*Changing the Process:* If a hazard cannot be controlled by changing materials, it may be possible to accomplish the objective by changing the process or operating method. Replacement of hand methods by mechanization may well result in elimination of a hazard. The spreading of lead oxide onto the lead grids by machine instead of by hand has reduced the lead exposure in the storage battery industry. Many similar instances of control by mechanization may be listed. A word of caution is necessary at this point, however, as mechanization may aggravate a hazardous condition. For example, the dust created by mechanical conveying of material is usually much greater than that produced by manual methods. The mechanical shakeout of foundry castings also releases more dust than the shakeout performed by hand.

Mechanization is not the only way in which a process may be changed. Another and very effective means for dust control is the use of wet methods. This measure has been employed with great success in drilling operations in mines. A small stream of water applied to the rock through the drill results in a very appreciable reduction of dust levels.

*Enclosure:* A very important and useful control principle is enclosure. Many operations may readily be enclosed, thereby preventing the escape of contaminants. Grind-

ing and milling are good examples of dusty operations which may be controlled by this method. Conveyors and abrasive blasting are other operations which lend themselves to enclosure.

*Isolation:* If an operation cannot be enclosed, it is often possible to employ the related principle of isolation. In this case, the operation is put in a location where workers are not exposed to the contaminant. For example, a crusher can often be located in a separate building or on a different floor from operations where men have to work. By this means, no one is subjected to the dust created except one man who would have only brief and intermittent exposures while checking its operation. Even in instances where operators must be in constant attendance, isolation of the process limits the number of workers exposed, and they can be protected by supplemental measures to be discussed later.

The principle of isolation is followed, in effect, when certain extra dusty operations are performed off-shift. A good example of this is encountered in the foundry industry, where shakeout is often done at night, so that few men are exposed to the dust created. Another example is found in mining or tunnel work, where blasting is done at the end of the shift, and the men do not return until the next day. This allows ample time for the blasting gases to be dissipated.

*Dilution:* The next control principle to be discussed is dilution. By dilution we mean general ventilation in sufficient quantity to dilute the atmospheric contaminant to a safe concentration. Dilution is perhaps the simplest and most common method employed for the control of hazards. If the air in a room is smoky and we open the windows, we are attempting to dilute the smoke to the point where it will not be noticeable. General ventilation plays a part, intentionally or not, in practically every workroom. In the majority of instances it is the only control measure used.

*Local Exhaust Ventilation:* However, in preference to dilution, local exhaust ventilation is frequently employed. The principle involved here is to remove the contaminant before it can get into the general room atmosphere. This is done by applying suction at the point where the contaminant is released.

Local exhaust ventilation is perhaps the most valuable means available for control of air contaminants. It is used in innumerable operations, such as spray paintbooths, plating tanks, foundry shakeout, welding, grinding, rock drilling, and many others.

*Personal Protective Equipment:* The majority of health hazards in industry can be controlled by the principles which have been outlined. In some instances, however, they cannot be used or are not sufficient by themselves or in combination. In such cases personal protective equipment may have to be used.

Protective equipment may be grouped in the following classes:

- Protective clothing,
- Protective creams,
- Visual protection,
- Auditory protection,
- Respiratory protection.

Where respiratory equipment is used, it is recommended that it carry the Bureau of Mines' approval for the specific hazard involved. Approvals are granted for specific hazards, such as toxic dusts, metal fumes, mists, and organic vapors.

*Housekeeping:* Good housekeeping is a fundamental part of any health program and is essential to efficient plant operation. It is of special importance in the control of dust hazards. In many plants where there is a limited budget for dust control, more results on a dollar for dollar basis can be achieved by good housekeeping than almost any other method.

Good housekeeping means much more than sweeping of floors. It includes orderly storing of equipment; good maintenance of machinery to prevent unnecessary vibration or escape of material; placing of operations in such a manner as to limit the number of workers exposed to hazards; prevention of unnecessary accumulations of dust and dirt on windows, light fixtures, beams, etc.; and cleansing methods which do not in themselves result in stirring up of greater dust concentrations.

Upon completion of a study, a complete and detailed report is sent to the industry or person requesting the study. This report is sent through the County Health Officer. It contains the findings of the study and recommended control measures, where such are indicated.

After sufficient time has elapsed to allow for the necessary control measures to be installed, follow-up visits are made in order to check the efficiency of the controls.

The principal need at the present time is assistance in locating industries that present potential health hazards to their employees. County Health and Sanitation Officers can be of great help by reporting all cases of suspected or confirmed occupational diseases, by reporting all potentially dangerous conditions with which they come in contact, and by notifying the Bureau of Sanitation when and if recommended controls have been installed so that a follow-up check can be made of the installation.

Space does not permit a great deal of detail on instrumentation, methods of analysis, or types of hazards encountered. These subjects will be more fully covered in subsequent articles.

**Spasms In Infants**—Alleviation of spasms in the upper gastrointestinal tract of infants has been accomplished through oral administration of procaine amide, a synthetic anesthetic, it was reported in the Journal of the American Medical Association for April 17th.

Four Chicago physicians described four cases in which infants suffering from pylorospasms showed marked improvement and eventual cessation of vomiting following use of the drug in a water solution. Pylorospasm is a condition in which the infant vomits its food because spasmodic contractions of the outlet of the stomach keep the food from leaving the stomach and entering the intestines.

In two other cases, complicated by congenital tumors of the outlet of the stomach, use of procaine amide following surgery to remove the obstruction aided in the postoperative management, they added.

"The findings in these cases and the course of the infants described here suggest that procaine amide can play an important role in the alleviation of spasm in the upper gastrointestinal tract of infants," the doctors stated.

"The use of procaine amide (Pronestyl, trade mark) in pylorospasm has not been previously reported. Its mode of action in the alleviation of spasms of the upper gastrointestinal tract is unknown. On the basis of our knowledge of the pharmacology of this drug, we postulate that its mode of action is due to anesthetization of the gastric mucosa that causes a diminution in local irritability and an elevation of thresholds to all gastrointestinal stimuli, a relaxation of the pyloric sphincter, and a quiescence of all spontaneous gastrointestinal movement.

"Further trial of procaine amide administered orally in pylorospasm in infants is suggested."

While no side-effects to the drug were noted in this series of patients, careful observations should be made for evidence of heart changes, central nervous system stimulation or depression, and blood constituent changes.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR DECEMBER 1953

Live Births Stillbirths Deaths by Cause	Number Registered During December 1953			Rates* (Annual Basis)		
	Total	White	Colored	1953	1952	1951
Live births	7179	4419	2760	26.7	25.8	27.1
Stillbirths	155	74	81	21.1	25.6	23.6
Deaths, stillbirths excluded	2548	1538	1010	9.5	9.7	9.1
Infant deaths— under one year	270	135	135	37.6	40.0	43.0
under one month	168	92	76	23.4	24.0	28.0
Cause of Death						
Tuberculosis, 001-019	42	17	25	15.6	12.8	21.6
Syphilis, 020-029	7	1	6	2.6	2.3	3.4
Dysentery, 045-048	1	1	1	0.4	0.4	0.8
Diphtheria, 055	2	1	1	0.8	0.4	1.9
Whooping cough, 056	2	1	1	0.8	0.8	1.5
Meningococcal infections, 057	8	4	4	3.0	3.4	0.8
Poliomyelitis, 080, 081	1	1	1	0.4	1.1	0.4
Encephalitis, 082, 083	1	1	—	0.4	—	—
Measles, 085	—	—	—	—	—	0.8
Malignant neoplasms, 140-205	267	191	76	99.1	96.7	91.8
Diabetes mellitus, 260	28	21	7	10.4	10.9	14.4
Pellagra, 281	2	1	1	0.8	0.8	1.1
Vascular lesions of central nervous system, 330-334	330	191	139	122.5	127.2	117.2
Other diseases of nervous system and organs of special sense, 340-398	29	10	19	10.8	17.3	11.8
Rheumatic fever, 400-402	6	2	4	2.2	0.8	—
Diseases of the heart, 410-434	595	415	180	220.9	—	—
Hypertension with heart disease, 440-443	165	89	76	61.3	297.7	267.9
Diseases of the arteries, 450-456	60	41	19	22.3	14.3	15.9
Other diseases of the circulatory system, 444-447, 460-468	53	27	26	19.7	16.6	11.8
Influenza, 480-483	21	11	10	7.8	13.5	7.6
Pneumonia, all forms, 490-493	120	62	58	44.6	40.6	46.3
Bronchitis, 500-502	6	5	1	2.2	3.4	1.5
Appendicitis, 550-553	4	3	1	1.5	1.5	2.7
Intestinal obstruction and hernia, 560-561, 570	12	6	6	4.5	3.8	6.1
Gastro-enteritis and colitis—under 2, 571.0, 764	8	5	3	3.0	4.9	4.2
Cirrhosis of liver, 581	15	8	7	5.6	5.6	8.3
Diseases of pregnancy and childbirth, 640-689	10	3	7	13.6	20.5	10.9
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 682, 684	—	—	—	—	2.7	1.4
Congenital malformations, 750-759	32	28	4	4.5	4.8	3.1
Accidental deaths, total, 800-962	219	140	79	81.3	74.9	58.4
Motor vehicle accidents, 810-835, 960	99	72	27	36.8	24.8	19.7
All other defined causes	377	214	163	140.0	151.3	153.7
Ill defined and unknown causes, 780-793, 795	125	40	85	46.4	53.1	50.5

Rates: birth and death rates per 1,000 population; infant deaths per 1,000 live births; stillbirths per 1,000 deliveries; maternal deaths per 10,000 deliveries; deaths from specified causes per 100,000 population.

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## BOOK ABSTRACTS AND REVIEWS

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**The Conception of Disease: Its History, Its Versions and Its Nature.** By Walther Riese, M. D. Cloth. Price, \$3.75. Pp. 120. New York: Philosophical Library, 1953.

Disease, like philosophy and life, means different things to different people. And it long has. It meant one thing to the Stoics, something else to the followers of Plato, and still another to the metaphysicians.

Dr. Riese assumed the formidable task of studying and evaluating these many ideas and presenting them as intelligibly as possible for the comparative study of his fellow physicians and others interested in this phase of health preservation. The fruits of his labors are found in this volume. It is not likely to be read with pleasure by the average person. But Dr. Riese is not trying to reach the average person. The book presupposes a great deal of medical and philosophical knowledge on the part of the reader. It seems certain that the author also takes it for granted that the reader has a great deal of enthusiasm for this particular aspect of medicine. A reading knowledge of Latin will also come in handy, for there are many quotations in that language which Dr. Riese has not considered it necessary to translate.

The author reminds us that the cause-and-effect association in people's minds of sin and sickness goes back to civilization's earliest days. What he calls "the moral conception of disease" is, he says, "among the oldest and, at the same time, the most persistent interpretations ever conceived by man losing his health."

Dr. Riese has an impressive and scholarly background, with posts on medical faculties in France and Germany. He is currently on the staffs of the Medical College of Virginia, the Richmond Professional Institute of the College of William and Mary, the Washington School of Psychiatry, and the Virginia Department of Mental Hygiene and Hospitals. He thus has achieved a place of distinction in the field in which he writes. Others in that field especially will find this small volume highly informative.

John M. Gibson.

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**Sexual Behavior in the Human Female.** By Alfred C. Kinsey, Wardel B. Pomeroy, Clyde E. Martin, Paul H. Gebhard, Research Associates; and others on the Staff of The Institute for Sex Research, Indiana University. Foreword by Robert M. Yerkes and George W. Corner. Cloth. Price, \$8.00. Pp. 842, with 151 charts, 179 tables and 4 illustrations. Philadelphia and London: W. B. Saunders Company, 1953.

Publication of Dr. Kinsey's study on sexual behavior in the human female was accompanied by such a fanfare of publicity in the lay press as to raise the question as to whether this volume

was intended for lay consumption or for use as a medical reference book as originally claimed. So much hue and cry was raised in the lay press, and so much open discussion of human sexual behavior was provoked by the publication of this volume, that doubts have been raised as to whether this volume belongs in the field of medical literature or in the field of pornographic literature. There seems little doubt that Dr. Kinsey and his associates have attempted to approach the problem from an objective standpoint and this very objectivity may point up one weakness in the whole plan. There have been other volumes written on human sexual behavior, most of them being the results of tedious, life-long studies having their origin in prolonged doctor-patient relationship. Dr. Kinsey and his group have approached the subject in a more objective manner, and perhaps a more scientific manner, but a question arises as to whether women will freely give a factual account of their sexual history when interviewed for that purpose by total strangers. It would seem to this reviewer that the natural human response would be for the timid souls to minimize their sexual history while the bolder ones might tend to exaggerate. While Dr. Kinsey's approach is undoubtedly objective, it does seem to leave out the human element in his considerations and it is most difficult for this reviewer to disassociate completely sexual behavior and the human element.

This volume represents the second phase of a study of human sex behavior that has been underway for some fifteen years at the University of Indiana. The material contained in this volume represents data obtained by personal interviews with 5,940 women. A total of almost 8,000 women were interviewed but some data on some of the women were omitted from this study. Much criticism followed the publication of this volume, the complaint being that 5,940 women who submitted to this interview were not representative of a fair cross section of American women. There can be little doubt that the interviews were thorough, for the questions asked probed into every phase of the woman's background, her cultural and religious origins, as well as her own personal life—premarital, marital, and extramarital. Various of the responses are discussed in detail throughout the book and the accumulated data are presented in a series of tables at the end of each chapter. The findings are further illustrated by numerous simple graphs. The last five chapters are devoted to a study of the anatomy, physiology, and the neural mechanism of the sexual response and orgasm. A comprehensive bibliography is included in the volume. Any volume containing this much data and statistics must be regarded as some type of reference work and for this reason Dr. Kinsey's present volume may have a place in certain libraries.

Dr. Kinsey's objective approach to the question of sexual behavior causes him to omit mention of what is commonly called love, and he appears to leave entirely out of consideration any question of traditional morality. He would appear to be entirely unmoved by any report of sexual aberration from any of the women who were interviewed. It might appear to some that he condones promiscuous petting while to others he might appear to encourage such behavior as masturbation. Some passages on pages 262 and 263 might tend in that direction and could prove dangerous to adolescents into whose hands this volume might fall. While it must be conceded that this volume presents extensive data on the subject of sexual behavior of the human female, any expression of the value of this volume must be limited.

J. M. Barnes, M. D.

**Epidemics in Colonial America.** By John Duffy. Cloth. Price \$4.50. Pp. 274. Baton Rouge: Louisiana State University Press, 1953.

In August 1735 the people of Kingston, New Hampshire, especially the doctors, became greatly disturbed by an outbreak of "throat distemper." Those whom it attacked suffered from marked swelling of the throat. White or ash-colored specks appeared. The skin broke out in eruptions. The sick became weak and debilitated generally. As a colonial historian wrote later, "a strong tendency to putridity" appeared. And the mortality among the first 40 to be stricken, most of them youngsters, was 100 per cent. Marching slowly but irresistibly like a conquering army, this outbreak reached Boston in about three months. In time it also appeared in a number of other communities.

In one parish every child in 20 families was taken. Twenty-seven members of five families succumbed, and more than a sixth of all the residents of that community were carried to their graves by this single disease in a little more than a year. In an entire province, a thousand or more people, including some nine hundred youngsters, fell under its poisonous touch. The great lexicographer Noah Webster called it "the plague among children."

Modern doctors and laymen have another name for it: diphtheria. Many historians say that the New England outbreak was the first large-scale appearance of this disease in what is now the United States. They may or may not be right. But one thing is unquestionable: What those New Hampshire youngsters had and fought against so unavailingly left its permanent mark.

That "throat distemper" was only one of a number of contagious diseases which attacked the colonial ancestors of modern day New Englanders. Smallpox struck down many, although not as many as is generally supposed. Scarlet fever was so much like diphtheria that the doctors often were unable to tell them apart and frequently treated one when the victims had the other. They also confounded the confusion by calling both of them "throat disease," "throat ail," "canker ail," "malignant quinsies," "putrid sore throat," "malignant sore throat," "malignant

croup," "malignant angina," and a host of other diseases that sound strange indeed to modern ears. Yellow fever, nesting in the West Indies, struck with ferocious intensity but actually proved less deadly than many of us have been led to believe. A large percentage of those who were fortunate enough to escape all these were unfortunate enough to contract mumps, measles, whooping cough, influenza, pneumonia, malaria, and a host of other illnesses that are still conspicuously with us.

The story of these diseases and the disability and death among those they touched is well told by the English-born author of *Epidemics in Colonial America*. Mr. Duffy has done a vast amount of patient research and a careful job of writing. The product is a volume which throws a bright light upon the disease problems that vied with the Indians, the French and the British in making life uncertain and death a constant neighbor in America's cradle days.

John M. Gibson.

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**Doctors In Service**—Results of the first year's survey of physicians leaving active military service are carried in a report recently issued by the AMA's Council on National Emergency Medical Service. Information obtained from this continuing questionnaire study is being used as the basis for a series of conferences with Department of Defense and Armed Forces representatives in an effort to improve the utilization of medical personnel and the formulation of a more effective voluntary officer procurement system.

During the first year of the study—July 15, 1952 to Aug. 1, 1953—a total of 3,948 completed questionnaires revealed that the average time spent in service was 24.7 months; average tour of duty in U. S., 7.6 months; average tour of foreign duty, 17.1 months. Twenty-nine per cent felt there was overstaffing, 20 per cent understaffing and 51 per cent adequate. Of those assigned to domestic duty, 53.4 per cent were engaged in treating military personnel, 28.3 per cent in treating military dependents and 18.3 per cent in "other"; while of those assigned to overseas duty, 51.8 per cent treated military personnel, 23.8 per cent dependents of military personnel and 24.4 per cent "other." Answers to the question regarding the *type of medical care* provided for *other than* military personnel indicate that in the Army and Navy the most frequent type was outpatient care, while in the Air Force it was obstetrics and gynecology.

Regarding the question, how national and local medical associations can better serve their members in service, the following activities were suggested—more information via a newsletter, etc.; personal visits by civilian doctors to evaluate grievances; invite military doctors to civilian medical meetings; assist in locating position after discharge; assist in preventing evasion of military service; distribution of questionnaires to physicians in service; provide specialists for clinical conferences.

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## CARDIOVASCULAR ADJUSTMENTS IN ANEMIA

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Hemoglobin within the red blood cell is the vehicle and the cardiovascular system the conduit for delivery of oxygen from the alveolar air of the lungs to the tissues for cellular metabolism and internal respiration. With alteration of either of these basic factors there occur certain physiologic cardiovascular and metabolic adjustments so as to maintain respiratory homeostasis. As with other organ systems of the body, the total oxygen-binding capacity of the normally available hemoglobin is considerably in excess of physiologic requirements. Of the oxygen bound to hemoglobin approximately 33 per cent is utilized by the tissues, thus allowing for a 66 per cent safety factor. In view of this there are critical levels to which the circulating red cell mass with its hemoglobin content must be reduced before the patient becomes symptomatic.

Symptoms due to anemia depend upon 1) the rapidity of development of anemia, 2) the degree of anemia, 3) the preexisting integrity of the cardiovascular system, and 4) the activity of the patient. With rapid exsanguination it is apparent that sufficient time does not elapse for cardiovascular homeostatic adjustment and the patient presents the familiar picture of peripheral vascular collapse or shock. Conversely, when anemia develops gradually over a period of

two to three years, as in pernicious anemia, considerable cardiovascular adjustment can be effected and the patient may thus be relatively asymptomatic in the face of severe anemia. It is also apparent that very slight degrees of anemia in individuals with poor cardiovascular reserve may result in disproportionate symptoms since the cardiovascular system may already have been extended to its physiologic limit. Similarly, inordinate symptoms may be seen in the anemic patient performing strenuous activity, such as plowing a field, since absolute oxygen utilization under these circumstances may exceed the physiologic one-third and approach more closely the actual oxygen content of arterial blood. Conversely, the anemic patient maintained at bed rest may be completely asymptomatic even though the degree of anemia is comparable to or more severe than that of the symptomatic individual who is physically active.

On the basis of physiologic oxygen utilization one would anticipate that the hemoglobin must be reduced to a level of approximately 33 per cent before symptoms appear. This is not the case clinically, however, since in a given patient under ordinary conditions of activity symptoms appear when the hemoglobin is reduced to 50 per cent or below. With reduction of hemoglobin to 30 per cent or less the cardiovascular compensation becomes overextended and the cardiovascular system "cracks" or breaks down with resultant frank heart failure.

Figure I depicts graphically some of the physiologic cardiovascular adjustments that occur as anemia becomes progressively more severe. Basically these adjustments

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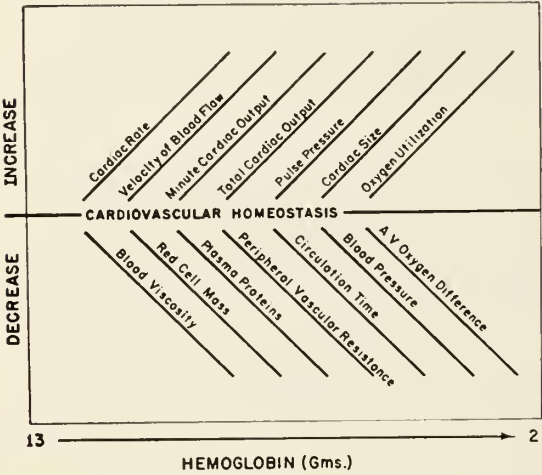


FIG. I  
SCHEMATIC REPRESENTATION OF CARDIOVASCULAR ADJUSTMENTS IN ANEMIA

may be considered to fall into two categories: 1) those adjustments which are manifested by an increase in certain homeostatic functions, and 2) those which are manifested by a decrease in certain functions. As the amount of hemoglobin, and consequently the oxygen carrying capacity of the blood, diminishes there occurs an increase in heart rate. This is a simple mechanism whereby the smaller amount of oxy-hemoglobin in arterial blood can be delivered to the tissues more expeditiously and more frequently in order to maintain the total minute oxygen supply to the tissues as nearly normal as possible. To further facilitate tissue oxygen supply the velocity of blood flow increases. This is accomplished not only by increased heart rate but also by an associated decrease in blood viscosity. Reduced blood viscosity is a direct result of decreased red cell mass and total plasma protein. With these changes there occurs an increase in the minute volume and total output of the heart. Concomitantly there is a decrease in peripheral vascular resistance. The decreased peripheral vascular resistance with associated increases in cardiac output, blood velocity, and heart rate results in shortening of the circulation time. Reduced peripheral vascular resistance also tends to cause a reduction in both the systolic and diastolic blood pressures. There is, however, disproportionate reduction in the diastolic blood pressure as compared with the systolic blood pressure, this being manifested as a widening of or increase in pulse pressure. With sustained increased cardiac output and inflow load, cardiac enlargement eventually occurs. Initially this is simple work hypertrophy. Cardiac dila-

tation only occurs when the cardiovascular system is extended beyond its capacity for physiologic adjustment to maintain this pace. When this occurs frank heart failure of the high output type supervenes. Although these cardiovascular and humoral adjustments serve their purpose well in an attempt to convey oxygen to the tissues, there still remains a deficit in the overall tissue oxygen supply as compared with the normal. As a consequence of this hypoxia the tissues must and actually do utilize a greater percentage of the available arterial oxygen, this being manifested as a decrease in the arteriovenous oxygen difference. Using composite figures derived from the studies of Brannon, Merrill, Warren and Stead,<sup>1</sup> this compensation is shown numerically in Table I.

Number of Patients	Hgb. (Gms.)	Oxygen Content (Vol. %)		A-V Oxygen Diff. (Vol. %)	Oxygen Utilization (%)
		Arterial	Venous		
14	2-7	6.0	3.4	2.6	43.3
10	7-13	11.8	8.0	3.8	32.2
19	Normal	18.7	14.7	4.0	21.4

TABLE I. OXYGEN SATURATION IN ANEMIA. A-V OXYGEN DIFFERENCE DECREASES AND OXYGEN UTILIZATION INCREASES AS ANEMIA BECOMES MORE SEVERE.

The sum total of the above-outlined physiologic adjustments to anemia constitute what has been designated the hyperkinetic syndrome. This includes increases in heart rate, inflow load, cardiac output, blood velocity and widened pulse pressure, as well as decreased peripheral resistance and a shortened or rapid circulation time.

Many of the cardiovascular symptoms in anemia may be explained on the basis of these responsive changes. Palpitation and fulness in the chest are manifestations of the overactive heart. The occurrence of angina pectoris is infrequent (about 2 per cent) in the reported series of cases and depends very largely on preexisting atheromatous changes within the coronary arteries and defective collateral circulation to the myocardium. Peripheral pedal edema in the absence of frank failure of the right heart is attributed to lowered plasma osmotic pressure as a consequence of hypoproteinemia which is so commonly associated with anemic states. Exertional dysp-

1. Brannon, E. S.; Merrill, A. J.; Warren, J. V., and Stead, E. A., Jr.: The Cardiac Output in Patients with Chronic Anemia as Measured by the Technique of Right Atrial Catheterization, J. Clin. Invest. 24: 332 (May) 1945.

nea is common in anemia even in the absence of heart failure and can be simply explained on the basis of hypoxemia. One point worthy of note in symptomatically distinguishing patients with anemia from those with heart failure is the virtual absence of orthopnea in the anemic patient. This is in striking contrast to the patient with heart failure who may also experience all of the symptoms and exhibit all of the signs seen in individuals with anemia in addition to orthopnea.

Physical signs in the anemic patient may include cardiac enlargement as mentioned above. There appears to be good correlation between cardiac enlargement in anemia and the age of the patient. Of the cases reported by Ellis and Faulkner<sup>2</sup> with hemoglobin concentrations between 36 and 39 per cent, cardiac enlargement occurred in only 30 per cent of those patients aged 50 or less as compared to an incidence of 75 per cent in patients aged 50 or over. These authors also observed cardiac murmurs in approximately 70 per cent of the entire series of cases. These so-called hemic murmurs are usually systolic in time, being heard most commonly over the pulmonic and apical areas and are high-pitched and blowing in character. Those heard over the pulmonic area are considered the result of increased velocity of blood flow but may be related to an unusually marked contraction in the pulmonary conus producing what amounts to a minimal functional stenosis. Systolic apical murmurs are due to relative mitral insufficiency on the basis of cardiac hypertrophy and or dilatation. As pointed out by Gupta,<sup>3</sup> diastolic murmurs may also be heard in approximately 8 per cent of patients with moderate anemia. Such a murmur, when present, usually occurs in early diastole being heard in the 4th intercostal space to the left of the sternum and is the result of functional insufficiency of the aortic and pulmonic valves consequent to cardiac dilatation. Presystolic apical murmurs have been described but are exceptionally rare. Electrocardiographic changes have been described in 25 per cent of patients with varying degrees of anemia.<sup>2</sup> Such changes are not

seen, however, until the hemoglobin is reduced to 25 per cent or less. There may be prolongation of the QT interval as well as flattening of the T waves in Lead I. A-V nodal rhythm may occur and it should be pointed out that such rhythm has been produced experimentally on the basis of hypoxemia. S-T segment depression may also be observed. These ECG changes are considered to be contingent upon decreased oxygen supply to the myocardium itself. Obviously the preexisting state of the myocardium must be seriously taken into consideration in evaluating the mechanism of these changes. The differentiation of the symptoms and signs due to anemia from those due to heart failure on the basis of organic heart disease is sometimes difficult. The following pertinent differences exist, however, so as to permit proper differential diagnosis. In many instances the first sentence of the patient's history suffices to differentiate between the dyspnea of anemia and the dyspnea of heart failure. The patient with anemia will almost always complain of lassitude if the anemia is severe and will usually have palpitation as a pronounced symptom. When the anemia is moderate, the palpitation occurs only with exertion. When the anemia is extremely severe, there may also be palpitation at rest. The anemic patient thus complains primarily of lassitude, palpitation and exertional dyspnea whereas the commonest presenting symptoms of patients with heart failure are dyspnea and edema. In addition, the important symptom of orthopnea, so common in individuals with heart failure, is not a prominent symptom in the anemic patient. Hence, the patient's initial complaints will often allow one to decide immediately that one is dealing with an instance of the hyperkinetic syndrome, and looking at the patient will often settle, at a glance, that anemia is the cause. In addition to these historical differential points, the patient with anemia does not exhibit pulmonary and peripheral congestion, there is no distention of the neck veins, and the red count and hemoglobin are low.

Should anemia become progressively more severe the cardiovascular system may be overextended and heart failure supervene. In heart failure due to anemia there occurs an increase in right atrial pressure, as shown by Brannon et al.<sup>1</sup> This type of failure represents the high output variety similar to that seen in thyrotoxicosis and

2. Ellis, L. B., and Faulkner, J. M.: Heart in Anemia, *New England J. Med.* 220: 943 (June) 1939.

3. Gupta, P. C.: Study of Cardiac Sounds and Murmurs in Severe Anemia, *Indian M. Gaz.* 76: 392 (July) 1941.

beriberi heart disease. It is important to be aware of the right atrial pressure change since therapy, in the form of whole blood, may be unwisely directed and result in death of the patient. Sharpey-Schafer<sup>4</sup> has dramatically shown in the isolated heart-lung preparation the eventual result of over-extending Starling's law of the heart. As shown in Figure II, increased right atrial

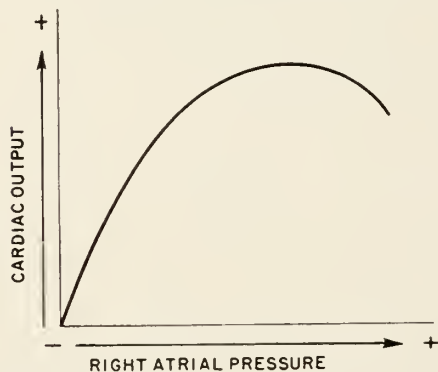


FIG II SCHEMATIC REPRESENTATION OF DECREASING CARDIAC OUTPUT WITH CONTINUED RISE IN RIGHT ATRIAL PRESSURE

pressure is associated with an increase in cardiac output up to a point. At the peak of this physiologically determined curve progressive increase in right atrial pressure results in progressive decrease in cardiac output to the point of acute and overwhelming pulmonary edema. Such a situation may easily occur in the anemic individual whose cardiovascular system is overloaded with injudicious blood transfusions to the point of hypervolemia with consequent progressive increase in right atrial pressure.

It is not within the scope of this paper to discuss individual methods of therapy in the various anemic states. Suffice it to say here that accurate determination of the type and cause of the anemia is of utmost importance. Therapy thereafter is directed toward correction of 1) the cause of the anemia, and 2) the anemia itself by the administration of potent and specific anti-anemic drugs. If blood transfusions are elected to be given they must be very cautiously and judiciously administered in order to prevent pulmonary edema as a result of sudden increase in right atrial pressure with consequent precipitous decrease in cardiac output. Therefore, it is preferable in such a case to use packed or washed red cells rather than whole blood in physically supplying the anemic patient with hemoglobin.

Harvesting of such cells is simply accomplished by allowing whole blood to "settle out" for 24 hours. In this manner one may supply hemoglobin with only a minimal increase in the total blood volume. It should be recalled that the decreased total blood volume in anemic patients is a consequence of decreased total red cell mass rather than primary reduction in plasma volume. By employing packed red cells and eliminating the plasma of bank blood, it is thus possible to administer the same quantity of red cells that would normally be contained in 1500 ml. of whole blood in no more than a total volume of 1000 ml. Such red cell transfusions must be accomplished slowly, allowing at least 4 hours for a 250 ml. infusion and giving no more than a total of 500 ml. in any one 24-hour period.

The use of digitalis in relief of the symptoms due to anemia without heart failure is of little or no value. This is to be anticipated since tachycardia, cardiac hypertrophy, pedal edema, and dyspnea are not the consequence of a failing myocardium. All of these signs and symptoms can be effectively abolished by correction of the anemia alone. Foxglove should be reserved for the time when the cardiovascular system "cracks," with consequent heart failure.

#### SUMMARY

The patient with anemia, in whom the hemoglobin level has been reduced to 50 per cent or below, presents the picture of the hyperkinetic syndrome. These symptoms and signs must be differentiated from those due to true heart failure and can be done on the basis of a low red cell count and hemoglobin level, absence of pulmonary and peripheral venous congestion, shortened circulation time, and little or no orthopnea. Therapy is directed toward the cause of the anemia and specific agents employed in correction of the anemia. Digitalis is of no value in relieving the symptomatology of anemia in the absence of heart failure.

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It has been found that in pulmonary tuberculosis treated effectively with drugs for adequate periods there is little remaining reversible disease (lobular pneumonitis and tubercles without necrosis), and that the principal remaining components are necrotic nodules and fibrosis. The necrotic nodules frequently contain large numbers of tubercle bacilli, and usually communicate with bronchi or bronchioles, thus furnishing the anatomic prerequisites for potential relapse and dissemination.—William B. Tucker, M. D., *Ann. Int. Med.*, Nov. 1953.

4. Sharpey-Schafer, E. P.: Transfusion and Anemic Heart, *Lancet* 2: 296 (September) 1945.

## DIAGNOSIS AND TREATMENT OF ABNORMAL UTERINE BLEEDING

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Abnormal uterine bleeding is second only to pelvic pain as a reason for seeking gynecologic advice. The majority of patients seek aid from their family physician. Due to the great trust placed in these men their recommendations are readily accepted and acted upon without hesitation. It therefore is the duty of anyone who treats gynecologic difficulties to realize his responsibility and act for the good of his patients.

Too many doctors feel that gynecologic complaints are easy to treat. Too often the opinion is reached that anyone who does not react to therapy favorably or who continues to have trouble is neurotic. Due to the complex physiology of gynecologic and obstetric functions much is yet to be learned. This is especially true of menstruation, with its complex hypothalamus-pituitary-ovarian-endometrial relationship that can be upset very easily. Abnormal uterine bleeding may be caused by interruption or interference of the above relationship by psychic factors, diseases in various parts of the body that may influence pituitary or ovarian function, or the cause may be some local process located in or near the uterus.

Endocrine glandular balance is upset by diseases that may change pituitary or ovarian function. This imbalance may produce bleeding abnormalities or, if more profound, may cause amenorrhea. Functional episodes of bleeding probably should be placed in this category. The pathologic cause of the functional bleeding episode is not readily demonstrable but it is due to a temporary upsetting of the endocrine mechanism. This balance of the endocrine glands is not affected by local diseases in or about the uterus. The abnormal bleeding that occurs from local diseases of the uterus is not due to any hormonal factors and usually will not be affected directly in a physiologic manner by their use.

### DIAGNOSIS

Any doctor who treats patients with gynecologic complaints may become fairly proficient in the diagnosis and treatment of

most bleeding problems that he may encounter. It should be understood that the handling of bleeding problems is not always easy. Each patient with abnormal uterine bleeding presents a diagnostic problem that should be carefully evaluated before any definitive therapy is begun.<sup>1</sup>

The approach to each bleeding problem should be made by taking a detailed history and doing a complete physical examination. This should include a speculum visualization of the cervix and bimanual pelvic examination after the bladder has been emptied. Many of the lesions in or about the uterus that cause abnormal bleeding may be diagnosed with ease with this type of examination. Additional aids in diagnosis may be obtained through the use of curettage, biopsies of suspicious tissue, and cytologic smears. Diagnosis will be made in the majority of instances by these simple measures because most abnormal uterine bleeding is due to an organic disease located in or about the uterus.<sup>2</sup> A good rule is to do a curettage on any woman who manifests abnormal uterine bleeding past the age of thirty-five or who has unexplained intermenstrual bleeding at any age. It is wise to biopsy any suspicious lesion of the genital tract, especially if the lesion is on the cervix.

If careful study shows that the uterus and its environs do not reveal the cause of the bleeding difficulty, careful study of the patient as a whole must be undertaken.<sup>3</sup> This is to ascertain if a disease in some distant part of the body may be causing an upset in the pituitary-ovarian relationship with some type of abnormality in the bleeding pattern. This may require careful clinical evaluation of the patient as a whole, together with various laboratory studies, before any definite conclusions may be reached.

1. Thomas, H. H.: Clinical Application of the Sex Hormones in Gynecology, J. M. A. Alabama 17: 134-136 (Oct.) 1947.

2. Word, B.: Abnormal Uterine Bleeding, Mississippi Doctor 25: 146-152 (Nov.) 1948.

3. Turlington, L. F.: The Office Diagnosis and Treatment of Functional Uterine Bleeding, South. M. J. 44: 429-432 (May) 1951.

## TREATMENT

The management of bleeding difficulties often may be unsatisfactory. Especially is this true where treatment has been instituted before a diagnosis has been established. Empiric treatment frequently confuses the true cause of the bleeding difficulty by its influence on changing the bleeding characteristics. Where this has occurred, it is well to allow an interval of time to elapse before instituting diagnostic or therapeutic measures.

Treatment should depend on the underlying cause and condition of the patient at the time of examination. Frequently hemostasis is of paramount importance due to hemorrhage or severe secondary anemia. In chronic bleeding problems, secondary anemia and chronic fatigue may become important factors in the treatment of these patients. Premenstrual tension and depression are frequently found.

Where bleeding is severe, blood transfusions are often needed. Immediate hemostasis may be obtained by curettage. In the patient with severe anemia it may be done under very light general anaesthesia. This is especially true where incomplete abortions cause exsanguinating hemorrhages. Bleeding will continue until the offending tissue is removed by curettage.

In severe bleeding episodes where the possibilities of ectopic pregnancy or complications of intrauterine gestation have been largely eliminated, hemostasis may be obtained temporarily by the use of intravenous Premarin.\* It should be given in 20 milligram doses at six to twelve hour intervals until bleeding stops. Hemostasis may be maintained by the oral use of 5.0 to 7.5 milligrams of oral Premarin given each day until the hemoglobin reaches a satisfactory level. At this time definitive surgery may be planned as needed. If surgery is not needed the excess tissue that is often present and causing the bleeding problem may be removed by large injections of progesterone as indicated later on in this paper. Another satisfactory method of hemostasis is the intramuscular use of two ampules of Pitressin tannate in oil.<sup>4</sup> This causes a sus-

tained contraction of the uterine musculature. It is not effective where pregnancy complications or infections are present.

Surgery offers more permanent benefit where organic lesions of the uterus are causing the abnormal bleeding. Curettage is the most commonly used surgical procedure. This frequently offers therapeutic as well as diagnostic help in many bleeding cases. Curettage is often curative in complications of pregnancy, endocervical and endometrial polyps, and hyperplasia of the endometrium. Curettage should always be done where abnormal uterine bleeding occurs after the age of thirty-five or where unexplained intermenstrual spotting occurs at any age. More definitive surgery is necessary to correct bleeding due to submucous fibromyomata, ectopic pregnancy and uterine prolapse. Malignancies of the genital tract that cause abnormal bleeding are treated by irradiation and surgery as indicated by the particular site of involvement.

Pelvic infections ranging from a mild endometritis to acute pelvic peritonitis may cause various degrees and patterns of abnormal bleeding and should be adequately treated as indicated by the areas affected and the degree involved.

Where the bleeding pattern is characterized by profuse prolonged regular menstrual periods, very frequently this may be benefited by the administration of methyl testosterone in daily doses of ten milligrams for sixty to ninety days. Frequently premenstrual molimina, such as abdominal swelling, increasing premenstrual nervousness, depression and mastalgia, are associated with this type of bleeding and are also benefited by this therapy. Seldom are there any complications when methyl testosterone is given in doses this small. Those that do occur are usually dull occipital headaches, slight increase in acne, and an increased unexplained nervousness.

Much less frequently found are those patients who exhibit abnormal uterine bleeding as irregular cycles with profuse and prolonged bleeding which is usually due to an anovulatory ovarian cycle. Often the endometrium is hyperplastic. Bleeding is usually controlled by the use of progesterone<sup>†</sup> given intramuscularly for four or five days in daily doses of twenty-five to fifty

\*Ayerst, McKenna and Harrison supplied the intravenous Premarin and oral Premarin.

4. Benson, R. C.: The Arrest of Abnormal Uterine Bleeding with Pitressin Tannate in Oil, *Am. J. Obst. & Gynec.* 55: 286-292 (Feb.) 1948.

<sup>†</sup>Schering Corporation supplied the progesterone (Proluton).

milligrams.<sup>5</sup> Therapy should be repeated for three or four cycles beginning on the twentieth day after the beginning of withdrawal bleeding. Progesterone converts the hyperplastic or proliferative endometrium to a secretory type which sloughs off when it is withdrawn. The removal of this tissue and its prevention of reforming controls the bleeding so that normal bleeding episodes occur. Usually this happens only so long as the progesterone is administered but occasionally spontaneous resumption of ovulatory cycles will be resumed.

Since hormonal therapy as outlined is largely used for control of bleeding and for hemostasis, it should be emphasized that diagnosis and treatment of the underlying cause should always be sought for and treat-

ed if at all possible. During the period of hormonal control of the abnormal bleeding, measures should be taken to elevate the general health level of the patient. Often this alone will correct many of the so-called functional abnormalities of uterine bleeding.

#### SUMMARY

Abnormal uterine bleeding usually occurs from local pathologic diseases in and about the uterus or from an endocrine imbalance due to diseases in more distant areas of the body which upset the pituitary-ovarian-endometrial relationship. Accurate diagnosis of the cause of the abnormal bleeding will make possible a physiologic approach to treatment with less likelihood of unnecessary surgery. Where indicated, surgery is the treatment of choice but there are many types of abnormal uterine bleeding which may be handled in a conservative physiologic manner.

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5. Thomas, H. H.; Jones, W. N., and Waldrop, E.: Abnormal Uterine Bleeding, J. M. A. Alabama 20: 389-392 (May) 1951.

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## LABORATORY TESTS IN THE DIAGNOSIS OF ENDOCRINE DISORDERS

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There are now available to the physicians in the state of Alabama most of the laboratory tests necessary for the accurate diagnosis of specific endocrine disorders. Through the proper choice and interpretation of these tests, it should be possible for the family physician to diagnose and recommend corrective therapy in most if not all of the so-called endocrine diseases. And conversely, many cases of non-endocrine origin will be spared expensive courses of therapy, long investigations, or even surgical explorations.

It is the purpose of this paper to present the tests of practical value which are available, with a few brief comments on their indications and interpretations. Specific instructions on the methods for collecting specimens for the tests may be obtained from many of the commercial laboratories, some of which will furnish containers for submitting material by mail. The tests for

thyroid, adrenal, and gonadal function will be discussed first, since the diagnosis of pituitary malfunction is usually suspected or exhibited by malfunction of one or more of the three glands which it controls. The parathyroids and pancreas will be omitted from the present paper since they are most likely not members of the pituitary family, and laboratory methods for diagnosis of their malfunctions have changed relatively little in the past decade.

I. *Thyroid*. Basal Metabolic Rate. In spite of the development of radioactive tracer studies and the determination of serum protein-bound iodine, the B. M. R. is still one of the most valuable tests of thyroid function. It is well known, however, that an abnormal B. M. R. may be due to conditions not associated with thyroid dysfunction. There are certain patients with a definitely low B. M. R. who do not appear clinically hypometabolic and experience no effect on full doses (2 or 3 grains, USP, daily) of thyroid extract. There are others, probably more common, who have definitely elevated values associated with leukemia, diabetes, cardiovascular disease, psychoneurosis, airway

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obstruction, etc., in whom the physician must turn to other methods of evaluating thyroid function.<sup>1</sup> This is particularly important in cardiovascular disease where a masked thyrotoxicosis can cause a serious or even fatal complication which can be dramatically relieved by antithyroid therapy.

**Protein-Bound Iodine.** The PBI is an excellent test for use in the above situation as well as in the routine diagnosis of thyroid disease.<sup>2</sup> A high value, however, is somewhat less reliable than a low one, particularly unless careful attention is paid to iodine exposure in the patient. Myelograms, cholecystograms, pyelograms, bronchograms, as well as iodine or iodide therapy, will cause high values for varying lengths of time. Usually a period of six months is sufficient time to elapse before attempting the test following iodine or iodide exposure, providing that its presence is not permanent, such as the lipiodol in some cases of bronchiectasis or in subarachnoid myelograms. In this instance the PBI may be permanently elevated and of no value in estimating thyroid activity. In other cases, such as a retrograde pyelogram or a normal bronchogram, only a few weeks may be necessary before a satisfactory PBI can be determined. Conversely, a low PBI may be due to nephritis or liver disease without true hypothyroidism so that some judgment is necessary in evaluating results in these conditions.

**Cholesterol.** A cholesterol determination is of limited value in the diagnosis of thyroid disease.<sup>3</sup> It is of some value in following the progress of certain cases under treatment and postoperatively where a rising cholesterol may be one of the earliest signs of developing myxedema.<sup>4</sup>

**Radioactive Iodine Studies.** The use of radioiodine uptake and excretion studies have added another excellent method for

evaluating thyroid function. As yet, this method has not been made generally available in Alabama, but it is only in an occasional patient that a diagnosis cannot be made with the use of the other available tests discussed above.

**II. Adrenal. Water Diuresis Test.** This test is mentioned first because of its simplicity and high diagnostic value in ruling out adrenal cortical insufficiency.

It is done as follows: After withholding all fluid beyond 6:00 P. M., a night specimen of urine from 10:00 P. M. to 7:00 A. M. is collected and measured. The patient then drinks a quantity of water equivalent to 20 cc. per kilogram of body weight. Thereafter, hourly urine specimens are collected until 12:00 noon. If the volume of any of the hourly specimens exceeds the total overnight volume, adrenal cortical insufficiency may be ruled out. If not, adrenal insufficiency may be present. Nephritis, cirrhosis, and any type of gastrointestinal disease with slow absorption of water may also give a similar result.

**Eosinophil Test (Thorn Test).** Excepting certain cases of allergic eosinophilia, a fall of 50% or more from a fasting control eosinophil count following an adequate stimulating dose of ACTH is evidence of good adrenal cortical function. Conversely, the lack of such a response is equally good evidence of adrenal cortical insufficiency. The use of epinephrine to elicit this response has been discontinued because of false normal tests in known adrenal cortical insufficiency. By continuing the ACTH stimulating dose for a period of three days and following the eosinophil count, it is possible to separate primary adrenal cortical insufficiency from that due to pituitary failure.<sup>5</sup> The latter will begin to show a normal response on the third day, as the adrenals begin to "wake up" from the atrophy due to pituitary trophic failure. The absolute level of eosinophils is also of considerable value in many situations where rapid screening is necessary. In unexplained postoperative surgical shock a high or even normal absolute eosinophil count (50-100 or more) is practically diagnostic of acute adrenal insufficiency, and intravenous cortisone therapy will be life saving. Another instance

1. Meckstroth, C. V., et al.: The Laboratory Diagnosis of Extrathyroidal Hypermetabolism, *J. Clin. Endocrinol. and Metab.* 12: 1373, 1952.

2. Starr, P., et al.: Clinical Experience with PBI as a Routine Procedure, *J. Clin. Endocrinol.* 10: 1237, 1950.

3. Peters, J. P., and Man, E. B.: The Significance of Serum Cholesterol in Thyroid Disease, *J. Clin. Investigation* 29: 1, 1950.

4. Bartels, E. C.: Post-Thyroidectomy Myxedema after Preoperative Use of Antithyroid Drugs, *J. Clin. Endocrinol. and Metab.* 13: 95, 1953.

5. Thorn, G. W.: Measurement of Adrenal Cortical Function, *J. Clin. Endocrinol. and Metab.* 13: 614, 1953.

which often occurs in the office is the problem of Cushing's disease in an obese patient with possibly a little plethora and hypertension or glycosuria. If the eosinophil count is over 100, or certainly if over 150, Cushing's disease may be ruled out with safety.<sup>6</sup> It should be mentioned, however, that an eosinophil count from a routine differential blood smear will not suffice. It is necessary to perform the test with extreme care, using special diluting solutions, and a counting chamber 2 mm. deep rather than the usual 1 mm. standard counting chamber.

**Serum Sodium and Potassium.** While it is true that in adrenal insufficiency, the serum Na will fall and the K will rise, this is a relatively late phenomenon, usually indicating impending crisis. Therefore results must be obtained within a few hours to be of any use, and great care must be taken not to allow any hemolysis to occur while collecting the specimen since this will give a false high serum K determination.

**Glucose Tolerance Tests.** The GTT and GITT (glucose-insulin tolerance test) show hypoglycemia unresponsiveness in adrenal insufficiency and diabetic curves in some hyperadrenal states (Cushing's disease) with insulin resistance. However, these tests, as well as those using salt deprivation (Wilder test), are unnecessary and often dangerous in the study of adrenal insufficiency. Their use has been described as practicing endocrinology in the "middle ages" and in our present state of knowledge should be arbitrarily discontinued.<sup>6</sup>

**17-Ketosteroids.** This examination is performed on a portion of a twenty-four hour urine collection. Its chief value is in the study of masculinizing syndromes, particularly in the female where all the 17-ketosteroid output is derived from the adrenals. Thus, in a female who has definite signs of virilism (enlarged clitoris, considerable facial hair, deepening voice, muscular strength, etc.), a normal 17-ketosteroid determination will usually rule out the adrenals as the cause for the syndrome. In such a situation a masculinizing tumor of the ovary is most likely present. When the 17-ketosteroids are elevated in this situation, the amount of elevation will give an indication of whether adrenal tumor or hyper-

plasia is present. As a rough rule, values above 50 indicate tumor, and if very high the tumor is malignant. Contrary to the common impression, the 17-ketosteroid output is of little value in the diagnosis of Cushing's syndrome. The 17-ketosteroid determination is also of some but limited value in testing for deficiency of adrenal cortical function. As low values are approached, the errors of the laboratory methods become more prominent, so that no diagnosis of adrenal insufficiency should ever depend solely on the presence of a low test for 17-ketosteroids.

Urinary "Cortins," "Corticoids," "11-Oxy-steroids," "Formaldehydogenic steroids." These are all tests of adrenal cortical hormonal output other than androgenic. They have been somewhat unsatisfactory, but are usually elevated in Cushing's syndrome, which has been the main clinical indication for these tests. Another test which shows considerably more promise is the 17-hydroxy steroid determination developed by Dr. George Thorn and co-workers at the Peter Bent Brigham Hospital in Boston.<sup>6</sup> These steroids correlate so well with compound E and F (cortisone and hydrocortisone) activity that this determination may eventually supplant all the others, except of course the 17-ketosteroids.

**III. Gonads. 17-Ketosteroids.** In the male, testicular function (androgenic) can be measured by 17-ketosteroid excretion. However, approximately 50% of the 17-ketosteroids are derived from the adrenals which must be taken into account when evaluating the results.

**Sperm count.** This is a relatively simple method of measuring testicular function. However, too much reliance should not be placed on absolute numbers; as probably a qualitative estimate is about all that is dependable. If definite testicular deficiency is present, biopsy is the only way to make a definite diagnosis; although whether the failure is primary or secondary to pituitary deficiency can usually be established with a urinary gonadotropin determination.

**Urinary estrogens.** This determination is only rarely indicated as there are fairly reliable clinical manifestations of ovarian failure, namely amenorrhea, vaginal smears showing lack of estrogenic effect, atrophic endometrium and, when present, hot flushes. Certain rare estrogen-producing

6. Thorn, G. W.: Lecture at the Medical College of Alabama, March 23, 1954.

tumors occur in both males and females where a high urinary estrogen level is diagnostic.

**Pregnandiol.** This is a urine examination which shows the presence of a corpus luteum, and therefore the occurrence of ovulation. The same information can be obtained from a basal temperature chart or a properly timed curettage.

**IV. Pituitary Gonadotropins (FSH).** This test is also done on a twenty-four hour urine collection, and is reported in terms of biologic (mouse) units. It is of most value in deciding whether ovarian or testicular failure is secondary to pituitary damage. The first symptom of the onset of pituitary disease is, in nearly every case, suppression of gonadotropin which, in the female, results first in persistent amenorrhea and, in the male, absence of spermatogenesis. These symptoms commonly occur long before signs of thyroid or adrenal insufficiency, and often before any intracranial findings are apparent. Therefore, when aspermia or prolonged amenorrhea is present, and the gonadotropin determination shows no detectable activity, the diagnosis of pituitary disease is highly probable. However, if in the same situation the gonadotropins are elevated, the diagnosis of local ovarian or testicular failure is made. (The gonadotropins are rarely normal in this situation since a normal pituitary overproduces when its target gland begins to fail.)

Further evaluation of pituitary function depends upon demonstrating abnormalities in thyroid or adrenal function already described.

#### CONCLUSION

The various laboratory tests of practical value in endocrine diagnosis have been presented and discussed. Actual values for these determinations have been purposely omitted since there is a considerable variation in the methods of different laboratories and the range of normal values for each should be known when a result is to be interpreted. Obviously, many endocrine tests have not been mentioned but an attempt has been made to include most of the important readily available determinations necessary for the evaluation of thyroid, adrenal, gonadal, and pituitary function.

**Physicians in U. S.**—An all-time record number of physicians—218,522—were licensed to practice medicine in the United States at the close of 1953, it was disclosed in the 52nd annual report on medical licensure of the American Medical Association's Council on Medical Education and Hospitals.

Of this total, 156,333 were engaged in private practice, 6,677 were engaged in full-time research and teaching and were physicians employed by insurance companies, industries, and health departments, 29,161 were interns and residents in hospitals and those engaged in hospital administration, 9,311 were retired or not in practice, and 17,040 were in government service.

According to the report, during 1953 there were 14,434 licenses to practice medicine issued by the 48 states, the District of Columbia, Alaska, Canal Zone, Guam, Hawaii and Puerto Rico—an increase of 1,206 over the number issued during 1952 and the third largest number issued in the history of this country. Of this total, 6,565 were granted after written examination and 7,869 by reciprocity or endorsement of state licenses or the certificate of the National Board of Examiners. The majority of those issued by reciprocity or endorsement were to already licensed physicians who moved their practice from one state to another.

The data presented in the report showed that last year 7,276 physicians received their first license to practice medicine. In the same period there were approximately 3,421 deaths of physicians reported, so that there was a net gain of 3,855 in the physician population in the United States and its territories and outlying possessions. During 1952, there was a net gain of 2,987.

The greatest number of licenses issued in 1953 was granted by California—1,977. New York was second with 1,348 and more than 500 physicians were registered in Illinois, Ohio, Pennsylvania and Texas. Less than 50 licenses were issued by Nevada, Delaware, Idaho, Montana, New Hampshire, North Dakota, South Dakota, Vermont, and Wyoming.

From 1935 through 1953, a total of 207,744 licenses to practice medicine was issued in the United States. During the same period there were 119,510 additions to the medical profession—an increase reflecting accelerated programs in medical schools, expanded facilities, and the licensure of foreign trained physicians.

The excellent rating of the nation's and Canada's approved medical schools was pointed up by the number of applicants who successfully passed examinations. Thirteen per cent of the total number of applicants who took written examinations for licensure failed, the report stated. Only 3.8 per cent of the graduates of approved medical schools in the United States and 4.1 per cent of those of approved Canadian medical schools failed. In contrast, 50 per cent of those graduated from now extinct medical schools in the United States failed, as did 45.5 per cent of the graduates of foreign medical faculties, 70.2 per cent of graduates of unapproved U. S. medical schools no longer in existence, and 13.4 per cent of graduates of schools of osteopathy.

**Polio Family Contact Risk**—The probability that more than one case of poliomyelitis will develop in a family is greater when the initial case is of the paralytic type than when it is nonparalytic, according to the May 29 Journal of the American Medical Association.

In addition, the prognosis of the subsequent cases that develop in the affected households is worse both for life and for paralysis if the initial case is paralytic, according to Drs. Morris Siegel and Morris Greenberg, Brooklyn, N. Y. The doctors based their conclusions on a study of poliomyelitis cases in New York City from 1949 through 1952.

One study made by the doctors concerned the type of multiple household infections in 167 families. There were 158 families with two cases of polio, seven with three cases, and two with four cases. In the 49 families where the initial case of polio was nonparalytic, 77 subsequent cases were nonparalytic; in the 82 families in which the initial case was of the spinal paralytic type, 71 subsequent cases were of the same type, and in the 36 families where the initial case was of the bulbar paralytic type, 30 subsequent cases also were of this type.

There were no subsequent cases of polio in persons over 39 years of age whether the initial case was paralytic or nonparalytic. There were only two subsequent cases of polio in persons over 19 years of age when the initial case was nonparalytic, as compared to 20 when it was paralytic.

"When the initial case was nonparalytic, other cases in the same family were also nonparalytic in 73 per cent of the instances," the doctors wrote. "On the other hand, when the initial case was paralytic, the subsequent cases were also paralytic in 70 per cent of the cases."

"The clinical importance of the foregoing data was reflected in the case fatality among subsequent cases. Those associated with a nonparalytic initial case had no deaths in 55 subsequent cases, in contrast to 17 deaths in 123 subsequent cases (13.8 per cent) following an initial case that was paralytic. In other words, all of the fatalities among subsequent cases occurred in the latter group."

"Therefore, the prognosis of multiple clinical infections in the household had some relationship to the type of disease manifested in the first case. If it was paralytic, other cases in the family were more apt to be paralytic and to have a greater case fatality than if the original case was nonparalytic."

A second study made by the doctors concerned the incidence of multiple cases of poliomyelitis during 1949 in 2,338 families in which 2,446 cases occurred. The rate of multiple infections of household contacts was 1,278 per 100,000. This was about 40 times greater than the rate of 31 per 100,000 for the general population, the doctors stated. Again it was disclosed that if the initial case was paralytic, the incidence of subsequent paralytic cases was higher.

"The explanation of these results is speculative," the doctors concluded. "The practical consideration seems fairly clear. First, the clinical type of disease that is first seen in a household is of some prognostic significance with respect to

the occurrence of other cases, their clinical types, and case fatality. Second, the need for protection of contacts is greater if the initial case is paralytic than if it is nonparalytic."

#### **Excess Oxygen Possible Cause of Eye Disease**

—Excessive administration of oxygen to premature infants is believed directly related to the development of a serious eye disease which may result in blindness, it was reported in the May 15 Journal of the American Medical Association.

The disease, called retrolental fibroplasia, may be controlled by severely limiting the concentration of oxygen given to premature infants, a restriction which does not appear harmful, in the opinion of Drs. Jonathan T. Lanman, Loren P. Guy, and Joseph Dancis, New York. They said:

"Retrolental fibroplasia was first recognized as a disease of premature infants in 1942; it is now first among the causes of blindness in children in the United States, and is the foremost problem other than death itself in the care of premature infants."

The doctors based their conclusions on a year-long study of 64 premature infants admitted to the Bellevue Hospital Premature Nursery. The babies weighed between two and four pounds at birth. Thirty-six of the infants were given a high concentration of oxygen in their incubators and 28 received a low concentration.

In the groups receiving a high oxygen concentration there were eight cases of irreversible retrolental fibroplasia, according to the doctors. Six of these infants are believed to have no useful vision, while two may have useful vision in one eye, they added.

In the groups of infants receiving a low oxygen concentration, oxygen was administered only when breathing difficulty occurred.

According to the physicians, early reversible stages of the condition developed in 22 (61 per cent) of the infants receiving a high concentration of oxygen. Only two babies in the groups receiving a low concentration of oxygen showed early stages of the disease.

All groups of patients received identical incubator care, formulas and vitamin therapy. Twenty per cent of the groups receiving a high oxygen concentration died, compared with 30 per cent in the groups receiving low oxygen. The doctors pointed out, however, that five of the infants in the groups getting a low oxygen concentration died of causes not connected with oxygen therapy, thereby reducing the death rate to 20 per cent, also.

The correlation between oxygen therapy and the development of the disease is uncertain, the doctors said. They added that the condition may be caused by excessive oxygen damaging the developing retinal blood vessels and the nerve cells of the retina.

"In a comparison of liberal and restricted oxygen therapy in premature infants, irreversible retrolental fibroplasia appeared in infants in the group with high oxygen but not in the group with low oxygen. Reversible, vascular stage lesions occurred in both groups, but with nine times the frequency in the group with high oxygen concentrations."

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X-RAY DIAGNOSIS ACCURATELY PIN-POINTS BRAIN TUMORS

Roentgen diagnostic procedures produce a very high percentage of correct brain tumor localization, according to a ten-year study made at the University of Michigan and published in the April issue of the *Journal of Roentgenology, Radium Therapy and Nuclear Medicine*.

Authors of the report are Dr. Fred J. Hodges and Dr. John F. Holt from the University of Michigan Medical School, Department of Roentgenology, and Dr. Robert C. Bassett and Dr. Lloyd J. Lemmen, of the University's Department of Surgery.

Seven hundred and fifty-five authenticated brain tumors, subjected to some form of preoperative roentgenologic examination, comprised the material of this study. Their research was begun July 1, 1941 and continued to June 30, 1951.

"The addition of electroencephalography and cerebral angiography to somewhat older methods of brain tumor localization, which have performed so well in the past, has not materially altered the already highly efficient preoperative localization of intracranial neoplasms," the four doctors state.

However, they point out that this must not be construed to mean that the relatively recently introduced methods are devoid of virtue—for that is certainly not true.

"Put to the rigid test of utilitarian worth," they add, "electroencephalography, which presents no added hazard to the patient, measurably extends the efficacy of standard neurologic procedures."

"Routine examination of the skull, so easily and innocuously employed," the doctors report, "will fail more often than not to give any sign whatever to indicate the presence of intracranial tumor."

They add that only once in 5 times when tumor is known to be present can the actual location of the lesion be determined by this method.

"The entire matter of brain tumor localization has reached a high level of performance in the matter of accuracy of localization of tumor site. This degree of accuracy can be expected, however, only when the best efforts of a divergent group of clinical performers, including the radiologist, are brought to bear in concerted fashion on the individual problem in hand," the doctors all agreed.



JOSEPH M. DONALD, M. D.  
President of the Association  
1954-1955

**DOCTOR JAMES SOMERVILLE McLESTER**

Dr. James Somerville McLester was born in Tuscaloosa, Alabama, January 25, 1877 and died in Birmingham, Alabama, February 8, 1954. He obtained his undergraduate education at the University of Alabama, where he received a bachelor of arts degree in 1896. In 1899 he was graduated from the University of Virginia, Department of Medicine, Charlottesville, with the degree of doctor of medicine. Soon after graduation he undertook postgraduate studies at the Universities of Göttingen and Freiburg, in Germany. Returning to Birmingham in 1902 he became professor of pathology at the Birmingham Medical College. He later became professor of medicine and began to practice internal medicine in this city. In 1907-08 he took further postgraduate work in biochemistry in Berlin and Munich. At this time he studied under Dr. Fredich Mueller. After the closing of the Birmingham Medical College Dr. McLester became associated with the School of Basic Sciences at the University of Alabama, in Tuscaloosa. He was appointed professor of medicine in 1919. He held this appointment until 1950, when he became professor emeritus of medicine. Dr. McLester was instrumental in the organization of the four-year medical school of the University of Alabama, which was opened in Birmingham in 1945.

In World War I he served in the U. S. Armed Forces in France. He was commanding officer of Evacuation Hospital No. 18, holding the rank of major, and later was promoted to lieutenant colonel. He was subsequently commissioned colonel in the Medical Reserve Corps. On his return from military service in 1919, he resumed his practice of medicine in Birmingham and his teaching at the University of Alabama.

He was a widely known authority in metabolism and nutrition and wrote many articles on these subjects. He did extensive research work in foods and feeding, and to him goes much of the credit for making America nutrition conscious. His textbook, "Nutrition and Diet in Health and Disease," is now in its sixth edition. In World War II he was chairman of the subcommittee on nutrition of the National Research Council which was concerned with the feeding of the Armed Forces. He was also a member of the Food and Nutrition Board of this council. He served as chairman of the Health Advisory Council of the Chamber of

Commerce of the United States and as a member of the General Advisory Committee of the National Foundation for Infantile Paralysis.

In 1933 he was appointed a member of the Committee on Foods, which was later renamed the Council on Foods and Nutrition, of the American Medical Association. He served continuously on this council with the exception of the two years that he was president of the American Medical Association. He served as the council chairman from 1940 to 1952. It was in the last few months of his life that he received a signal honor for his lifelong work on nutrition. The Board of Trustees of the American Medical Association, through its Council on Foods and Nutrition, on November 28, 1953, awarded him the Joseph Goldberger award for outstanding contributions in the field of clinical nutrition. Dr. McLester was thus cited for his important role in translating the results of nutritional research into human values and integrating nutrition into the teaching of all phases of medicine. He was recently named "Dean of American Nutritionists" by *Today's Health*.

Dr. McLester was active in the American Medical Association, serving as its 88th president. He was secretary of the Section on the Practice of Medicine of the American Medical Association, 1917-18, serving as chairman of this section at the annual session in 1920. He served as a member of the House of Delegates of the American Medical Association in 1921 and again from 1929 to 1933. In 1929 he received an honorary doctor of laws degree from the University of Alabama, and in the same year he became a member of the Council on Medical Education and Hospitals, serving until his election to the presidency of the American Medical Association in 1934.

He became a Fellow of the American College of Physicians in 1928, during a period of reorganization of the College. He served on its Board of Regents for several years and made valuable contributions to the work of the Committee on Credentials for the establishment of high standards of membership. He resigned from this board upon his election as president of the American Medical Association. He was awarded the degree of Master of the College by the Board of Regents in November 1953.

He was certified by the American Board of Internal Medicine and was a member of

many clinical societies; the Association of American Physicians, Society of Clinical Investigation, and the American Climatological and Clinical Association. He was one of the early active members of the Southern Medical Association and was for some years its chairman of the Section of Medicine.

He held an honored position in the medical societies of both the county and state. In 1910 he was elected president of the Jefferson County Medical Society and in 1920 he was made president of the Medical Association of the State of Alabama. From 1928 to 1935 he was a member of the Board of Censors of the Association. He served as medical director of the Birmingham Public Schools and as physician-in-chief of the Hillman Hospital for many years.

Dr. McLester was author of over one hundred articles on nutrition and metabolism and authored "Nutrition and Diet in Health and Disease," "The Diagnosis and Treatment of Disorders of Metabolism," and chapters in various medical books.

Many honors came to Dr. McLester during his lifetime, but of all these he derived the greatest satisfaction from the esteem in which he was held by his former students and residents. In 1950 they presented his portrait to the Medical College of Alabama as a mark of their appreciation for his teaching and leadership. At present it hangs in the library of this school. In his contact with the "young men of medicine" he repeatedly propounded the dicta of medicine that he felt characterized a *good physician*, those of humility, compassion, equanimity and taciturnity. His life and works are a reflection of these principles.

His death, due to coronary thrombosis, on February 8, 1954, came not only as a great personal loss to his many friends and associates, but it brought to a close a life devoted to his profession, and, through it, to his fellow man.

Howard L. Holley, M. D.

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A very large percentage of tuberculous persons remain unknown to public health authorities, and their lesions are generally extensive and many months or years old when they finally come to medical attention. The fact that most patients are in a fairly advanced stage of disease when their tuberculosis is first diagnosed is of extreme importance, not only because it adds difficulties to their treatment, but, even more, perhaps, because it is responsible for giving these persons countless opportunities to infect, unwittingly, many of the human beings with whom they come into contact.—*Rene J. Dubos, Ph. D., Am. Rev. Tuberc., July 1953.*

#### Radiotherapy in Bronchogenic Carcinoma—

Primary lung cancer has been increasing in interest and clinical importance over the past 30 years. Most workers agree that the incidence of this particular cancer is on the increase and that it has been increasing disproportionately fast among males. Although there may be some causal relation to chronic heavy cigarette smoking in susceptible individuals at a critical age period, other factors such as exhaust fumes and other types of air pollution may be important.

Whatever the true cause for this increase may be, lung cancer comprises from 5 to 10 per cent of all neoplasms found at autopsy, and it kills from 15,000 to 18,000 Americans annually. The ratio of males to females is somewhere between 4 or 5 to 1. Four-fifths of the patients are over 40 years of age and the greatest incidence is in the fifties.

The majority (approximately 85 per cent) of these cancers are squamous cell epitheliomas. This is the type which afflicts males from 10 to 20 times more frequently than females and which may bear an etiologic relationship to excessive cigarette smoking. This type is usually slower growing than adenocarcinoma. The adenocarcinoma is generally more peripherally located and its incidence is about equally divided between males and females.

Primary pulmonary carcinoma frequently metastasizes early to the regional bronchopulmonary, tracheobronchial or paratracheal lymph nodes, in that order. It is often a silent primary source with metastases to the brain which makes it behave like a brain tumor. Besides the central nervous system and the bones, the liver and opposite lung are frequent sites of metastases from this tumor. From there it may spread to any part of the body.

The most hopeful means of cure of this disease lies in radical surgery, whether lobectomy or pneumonectomy. Even so, the survival rates are not impressive.

Dr. Richmond Moore reviewed 370 case records from the Presbyterian Hospital in New York City for a 10-year period from 1940 through 1949. Eighty-seven (or 23.5 per cent) underwent resection. Of the 31 patients resected prior to 1946, four were alive in 1950, or a 13 per cent five-year survival rate of those resected and an overall five-year survival rate of only 3 per cent. Other writers have reported similar results.

There are many workers who stress the importance of radiotherapy both as attempted curative and palliative measures. Some believe that the higher the dose the longer will be the survival time. The patients who receive a higher dose are generally in better initial condition than the others and therefore might have survived longer even without radiotherapy. It has not been proved that a higher dose will necessarily produce longer survival.

Most radiotherapists have had patients in whom clinical, radiographic and even bronchoscopic evidence of neoplasm disappeared for a time after roentgen therapy, but in whom recurrence or metastasis eventually developed. In general, the smaller the tumor and the greater the "dose" of radiation applied to it, the more likely is the result to be good.—*Jacox, J. M. A. Georgia, April '54.*

# TRANSACTIONS OF THE ASSOCIATION

## 1954 SESSION

### Concluded

**Last Day, Saturday, April 17**

The Association, sitting as the Board of Health of the State of Alabama, was called to order at 9:00 A. M. by the President, Dr. J. O. Morgan.

The report of the Board of Censors was rendered by the Chairman, Dr. E. V. Caldwell of Huntsville.

### **EIGHTIETH ANNUAL REPORT OF THE STATE BOARD OF CENSORS, INCLUDING ITS REPORT AS A STATE BOARD OF MEDICAL EXAMINERS, AND AS A STATE COMMITTEE OF PUBLIC HEALTH**

**E. V. Caldwell, M. D., Chairman**

#### **PART I**

The State Board of Censors has the honor to submit to the Association its Eightieth Annual Report.

#### **THE PRESIDENT'S MESSAGE**

The President's Message reveals that he has a fine grasp of the wide variety of problems confronting the Association, and that he has given them deep thought, devoting a great deal of time studying and solving these problems. He commends all the agencies and personnel of the Association for their fine work. Especially does he commend the Vice-Presidents, the Committees, the State Health Officer, the Secretary-Treasurer of our Association, the Woman's Auxiliary, Blue Cross-Blue Shield of Alabama, and the Medical College.

The President discusses the American Medical Education Fund, to which all doctors are asked to contribute. He recommends the appointment of a committee by the incoming President to aid this worthy cause.

The President also recommends that a committee be appointed by the incoming President to look into the matter of group health, accident and professional liability insurance for the Association at large.

The Board recommends adoption of the President's Message and recommendations.

*The recommendations of the President, endorsed by the Board, were approved by the Association.*

#### **REPORTS OF THE VICE-PRESIDENTS**

All four Vice-Presidents were active during the year in promoting medical affairs of their districts, and all served as key persons in the Association's legislative program.

One regional meeting was held in each district and reports indicate that three of these meetings were well attended while the programs at all four were excellent. The problem of physicians' attendance at these meetings is still a continuing one. It was felt that one meeting a year in each district would be adequate and the ordinances of the Association were so changed last year. The excellent attendance at three of the district meetings would seem to indicate that the move was a wise one.

Attention is called to the problem of nurse procurement, postgraduate education for physicians, public education through the radio programs, program of United Mine Workers, and physician-druggist relationships.

The Board commends the activities of these Vice-Presidents and recommends adoption of their reports.

*The reports of the Vice-Presidents were adopted.*

#### **REPORT OF THE SECRETARY-TREASURER**

In spite of an unprecedented number of deaths among members of the Association, there was a net increase of some 48 in the membership rosters. Better than 91 per cent of the physicians of the State are members of their County Medical Societies and, therefore, of the Association. Sixty of our colleagues departed this life since our last meeting, including three who had been president in the persons of Drs. W. D. Partlow, James S. McLester and E. S. Sledge. Others had served the Association as Counsellors, as members of the Board of Censors, and as delegates to the American Medical Association. We regret their passing and will long hold them in our book of memories.

The Association funds are in good shape and again there was a small surplus of revenues over expenditures.

The adoption of the report is recommended.

*The Secretary-Treasurer's report was approved by the Association.*

#### **REPORTS OF COMMITTEES**

##### **PUBLICATION**

The Journal continued to meet its obligations in serving as a medium of scientific publication and of keeping the Association's members abreast of important happenings in the field of medicine. Financially there was a small deficit during the year but the funds of the Association were sufficient to take care of this.

Adoption of the report is recommended.

*The report was adopted.*

#### MEDICAL SERVICE AND PUBLIC RELATIONS

Much of the activities of this Committee for the past year was devoted to the preservation of the existing Medical Practice Act with results well known to the Association. Constant vigilance was maintained in the national scene as well and the thinking of the medical profession transmitted to our representatives.

The radio programs—thirteen in number—were transcribed and made available to radio stations throughout the State. Their use by some forty-four stations and the audience response should be highly gratifying to those who took part. The Board feels that this venture should be commended.

Physician-placement has never been handled successfully by any agency in this State. The Health Department has attempted to advise interested physicians of areas requesting medical help, but has never been in position to evaluate the real need. This Committee is making a beginning in this direction and may be able to bridge the gap between available personnel and locations.

Two projects of the Academy of General Practice received Committee support—the preceptor program and a study of indigent care. Both are still in the planning stage.

The proposal to add emphasis to the program of public information seems well timed. The profession is more cognizant today of its problems in public relations than at any time and the public now needs prior emphasis.

The Board feels that this Committee is doing a great deal of work for the Association and recommends that all members read its detailed report. It is further recommended that the report be adopted.

*The Board's expression of commendation was concurred in by the Association.*

#### MENTAL HYGIENE

The Legislature made available to the State Hospitals for the Insane increased funds which have done much to improve conditions. A state grant was also made for the prevention program under the auspices of the Health Department. Currently a survey of available facilities in the field of training, research and service is being conducted under the auspices of the Southern Regional Education Board with results to be reported to the Southern Governors' Council. Such a summary may well indicate next steps in Alabama's mental health program.

Adoption of the report is recommended.

*The report was adopted.*

#### MATERNAL AND CHILD HEALTH

Slow but definite progress is being made in the reduction of maternal deaths. The action of this Committee in studying every maternal death is defining the problem and pointing out the areas where greatest progress can be made. The 1952 report has been published and should be read by every physician who does any obstetrics. Midwives present a continuing problem, particularly in their inability to handle hemorrhages, but

physicians themselves can improve their records by proper management of problem cases.

The action of this Committee and a committee from the Alabama Pediatric Society in jointly studying the problem of prematurity is to be commended.

The Board recommends adoption of the report.

*The Board's recommendation was endorsed by the Association.*

#### CANCER CONTROL

The action of the Legislature in making available additional grants for the operation of the cancer program enabled the state-aid clinics to accept certain new classes of cases, such as selected lung cancer, brain cancer and certain types of skin cancer. The complaint of the clinic operators, however, is still that too many cases are referred that are far advanced and relatively hopeless from the point of view of cure. Early diagnosis is still the greatest hope for cancer patients and the physician's office should be alert to finding the early cases. Little new in the field of diagnosis or treatment was accepted in the past year so that reliance must remain on the tried methods.

The seminar held in Birmingham in January was an outstanding success. The American Cancer Society, working with the Jefferson County groups, the Medical and Dental Schools, and the Committee from this Association, is to be congratulated on the high calibre of the program and the success of the whole undertaking.

Adoption of the report is recommended.

*The report was adopted.*

#### PREVENTION OF BLINDNESS AND DEAFNESS

The progress being made towards the creation of an Eye Foundation Center in the area of the Medical School is encouraging. Alabama needs a facility where research can be joined with clinical activities.

The Alabama Sight Conservation Association reports a large volume of work indicating the extent of the demands and the need for this program. The Association is to be congratulated on the progress made.

Adoption of the report is recommended.

*The Board's recommendation was adopted.*

#### POSTGRADUATE STUDY

Through three Assemblies, embracing twenty counties of the State, the system of postgraduate seminars was carried out. A small fee from those in attendance, supplemented by grants from the Health Department, enabled the Medical College to send staff members to these meetings. A minimum of fifteen physicians will enable any area of the State to have this type of instruction on any subjects chosen by them. The Board hopes that the program can be extended to other areas this year.

Adoption of the report is recommended.

*The report was adopted.*

## ANESTHESIOLOGY

The policy of holding regional meetings for the anesthesiologists of the State would seem to be an excellent means of postgraduate training. The Lloyd Noland Hospital and the Medical College continue to offer opportunity for physicians interested in refresher courses. The Board concurs in the Committee's belief that better surgery will result from better anesthesia.

The Board recommends adoption of the report.

*Approval was given the report.*

## TUBERCULOSIS

Another new low in tuberculosis mortality was set in 1953, continuing the rapid decline of recent years. This Committee deals with the financial situation as it affects the various sanatoria and the place of the State in supporting hospitalization for the tuberculous. It recommends continued expansion of state aid so that all patients may be cared for. Of particular need are increased facilities for surgery. The surgical treatment of tuberculosis has assumed increasing importance and the techniques have improved, but many of the sanatoria are not in position to undertake major thoracic surgery.

The decrease in federal funds will influence the diagnostic and case-finding programs and at a time when activities should be stepping-up. Increased state support of the Health Department activities appears to be the only answer.

It is recommended that the report of the Committee be adopted.

*The Committee's report was adopted.*

## INDUSTRIAL MEDICINE

The formation of an organization of industrial physicians in the Birmingham area should stimulate the mutual interests of this group. It will provide an opportunity for discussion and exchange of information on problems involving industry. The curriculum of the Medical School embraces lectures on industrial medicine for the senior class and this is highly desirable.

Adoption of the report is recommended.

*The report was adopted.*

UNITED MINE WORKERS  
MEDICAL CARE PROGRAM

The Committee appointed by the President to study problems connected with the medical care program of the United Mine Workers met on several occasions. The Fund has been operating in those areas where coal mining is carried on. The Committee feels that many of Alabama's citizens are now getting a high type of medical and hospital care that was formerly not available. Difficulties encountered in the operation of the program centers around the question of physician participation and the payment of fees. It is the feeling of the present Committee that there should be a permanent liaison committee appointed by the President to deal with questions of policy and Fund medical problems. Members should come from those counties where the Fund operates.

The Board concurs and recommends the appointment of such a committee.

*Creation of the committee recommended was authorized by the Association.*

## BLUE CROSS-BLUE SHIELD

The representatives from this Association on the Board of Directors of Blue Cross-Blue Shield have reviewed the history of Blue Shield in this State and reveal the tremendous progress that has been made since its inception. Almost half a million members on December 31st is a noteworthy achievement. The majority of the six representatives feel that each county should have the privilege of a service contract if it so desires, and so recommends to the Association. The Board feels that the State is not ready for a service contract type of program and that a diversity of county systems would not be workable. The Board therefore commends the Association's representatives, but recommends non-concurrence in the service contract recommendation.

*The Association concurred in the Board's recommendation.*

## ACTION ON OTHER MATTERS

EXECUTIVE COMMITTEE OF BLUE CROSS-  
BLUE SHIELD

All other members of the Executive Committee of Blue Cross-Blue Shield begin their terms of office on March 1st. It is recommended therefore that the terms of office of the medical representatives on this Committee be extended to the last day of February and that the terms of new members begin on March 1st. It is further recommended that Dr. Jacques H. Baumhauer, Mobile, be appointed for a three-year term beginning March 1st, 1955 and expiring February 28th, 1958, to succeed Dr. J. E. Moss, whose term will have expired; and that Dr. Luther Davis, Jr., Tuscaloosa, be appointed for a similar term to succeed Dr. J. P. Collier.

*The appointees and their terms of office were approved by the Association.*

REPORT ON LEGISLATION CONCERNING THE STATUTE  
OF LIMITATIONS IN MALPRACTICE CASES

"The 1953 Legislature enacted a bill that brought some relief to the medical profession in respect to the statute of limitation for malpractice. In substance, the following are the provisions of the bill:

"Malpractice suits are to be filed within a two-year period. It is thought that this would take care of practically every such legal action as two years would be a rather long time to await suit beginning. However, to provide for this uncertainty, the bill further states that should signs and symptoms occur and be discovered after the two-year period of time, the party would have six months in which to enter suit. Finally, the statute of limitations is six years for any suit regardless of what time the discovery of disability or other conditions may come to the surface."

The Board recommends adoption of this report.

*The report was adopted.*

### MEDICAL SCHOLARSHIPS

Under the provisions of Act No. 666 of the 1953 Legislature setting up a scholarship program for medical education, the Board has awarded thus far twelve scholarships to students of the Medical College of Alabama. Each carries an appropriation of \$1250.00 per annum, and not to exceed \$5000.00 for the four years. The recipients of these scholarships agree to practice for a period of five years in rural communities which the Board may select. If any of them do not choose to carry out the contract they have the privilege of paying back the entire scholarship or whatever portion they fail to meet. The first scholarships were available at the beginning of school last year. The Board met and awarded six scholarships to six freshmen already in school, boys Dr. Durrett felt would be unable to finish their medical training without help. Six more scholarships were given at this meeting of the Board. Within four years we will have awarded twenty-four scholarships, and after these physicians have served one or two years of internship, we will have that number to assign to rural communities to be designated by the Board.

*The Association received this information with great interest.*

#### APPEAL OF DR. H. A. DARBY ON BEHALF OF DR.

D. E. JACKSON FROM THE ACTION OF THE

LIMESTONE COUNTY MEDICAL SOCIETY

IN DENYING HIM MEMBERSHIP

The Board has been officially advised that Dr. D. E. Jackson is now a member in good standing of the Limestone County Medical Society. It therefore recommends that the appeal of Dr. Darby on his behalf be dismissed.

#### PAYMENT OF DUES

In 1953 the President in his Message recommended that the thirty-year limitation on the payment of dues be removed and that all active members be required to pay. The Medical Service and Public Relations Committee repeats the recommendation this year. The Treasurer advises that there was a slight surplus in the Association's finances this past year and that the finances are in a sound condition. It is recommended therefore that the matter be held in abeyance until a need for additional funds presents.

*The Association agreed with the Board's recommendation.*

#### LEGISLATION

The economy move in Congress was reflected in substantial cuts during the current fiscal year in grants-in-aid programs amounting to some three hundred thousand dollars. Much of this came in the categorical allotments for venereal disease control and tuberculosis. Naturally the effect was felt at both the state and county level. Apparently states are going to be responsible for support of health programs to a greater degree than formerly.

The State Legislature met in the interim since our last meeting. The results of the attempt to

alter the Medical Practice Act are well known and were due to the interest of the profession. Additional state funds were made available to the tuberculosis institutions and for cancer and venereal disease activities. To a certain extent they compensated for federal cuts but they did not replace the total amounts and therefore curtailment in some state activities was essential. The State Legislature again evidenced a real interest in public health activities in the State.

The Board recommends adoption of this portion of the report.

*The report was adopted.*

#### RESOLUTION ON THE CORONER SYSTEM

From the Association of Pathologists

The Association of Pathologists in regular session adopted a resolution calling on the Association to investigate the needs of the State for a revision of the coroner system, and to prepare and sponsor such legislation as is deemed necessary to correct the present laws. Laymen are currently permitted to perform autopsies and to testify as to their findings in cases of homicide and of sudden death.

The Board recommends to the Association that the incoming President appoint a committee, under the chairmanship of a pathologist, and including at least one other pathologist, to investigate the needs of the State and to prepare suitable legislation for introduction in the next session of the Legislature to adequately provide for revision of the present coroner system.

The Board recommends adoption of this resolution.

*The Association authorized the appointment of a committee to pursue the matter referred to.*

#### RESOLUTION ON HEALTH AND HOSPITAL INSURANCE

Introduced by Lee County Medical Society

"WHEREAS, Voluntary health and hospital insurance is now very popular, and is being rapidly extended to cover large groups, including employees of factories and commercial firms, and

"WHEREAS, Insurance companies are making every effort to keep premiums as low as possible, and at the same time give liberal coverage for illness and necessary hospitalization, therefore be it

"Resolved, That members of the medical profession in Lee County cooperate in helping to keep premiums at the lowest possible rate by not admitting patients to the hospital for simple diagnostic procedures which could be and should be done in the doctor's office; and be it further

"Resolved, That this resolution be presented to the State Medical Association at its 1954 meeting for consideration and adoption as an expression of the sentiment of the medical profession of Alabama; and that it be called to the attention of the profession in other states."

The Board recommends adoption of this resolution.

*The resolution was adopted.*

RESOLUTION WITH REGARD TO UNIFORM  
INSURANCE BLANKS

Introduced by Marion County Medical Society

"Inasmuch as the members of this Society are in accord on the proposition that the time has come to remedy a problem concerning each and every member and representing financial loss to these members due to time spent by said members and office assistants in completing many and various insurance forms, many inquiries of which have no bearing on the case in question and much delay being caused thereby in payment to be made, we the members of the Marion County Medical Society do hereby resolve:

"1. That this problem shall be brought before the business session of the State Medical Association at its next regular meeting and

"2. That if it meets with favorable response from the members of the Association the President shall appoint at his earliest convenience a committee to meet with a representative committee appointed by the Insurance Commissioner of Alabama to formulate a uniform insurance blank to be used throughout the state of Alabama, and further

"3. That once such a blank is in existence no other shall be honored, completed or accepted by Association members in the state of Alabama."

The Board recommends adoption of this resolution, and that it be referred to the committee to be appointed by the incoming President to study group insurance, as recommended by the President.

*The Association approved the recommendation of the Board.*

*Part I of the Board's report was adopted as a whole.*

PART II

REPORT OF THE BOARD OF CENSORS AS A  
BOARD OF MEDICAL EXAMINERS

In this field of its activities the Board submits the following statistical report for 1953:

Certificates of qualification granted .....	150
(a) Physicians passing examinations June 23-25, 1953 .....	56
(1) Certificates granted .....	6
(2) Certificates to be granted after internships .....	50
(b) Naturopath failing to pass examinations June 23-25, 1953 .....	1
(c) Certificates granted applicants completing internships July 1, 1953 .....	51
(d) Physicians licensed through reciprocity .....	84
(e) Diplomates of the National Board of Medical Examiners licensed .....	8
(f) Physician re-licensed to practice medicine .....	1
(g) Physician's certificate of qualification to practice medicine revoked .....	1

(h) Physician granted the privilege to re-register for narcotic stamp .....	1
(i) Physician's narcotic registration suspended .....	1
(j) Chiroprody renewal licenses granted .....	34

CERTIFICATES OF QUALIFICATION GRANTED  
JUNE 1953 APPLICANTS

Goode, Plesent W., III	Mitchell, John P., Jr.
Jones, Moses W.	Sparks, James E.
Leal, Luciano I.	Williams, Frank E.

CERTIFICATES TO BE ISSUED AFTER ONE YEAR OF  
SATISFACTORY INTERNSHIP

Akin, John M., Jr.	Hunt, Albert C.
Anderson, Lewis D.	Jones, James K.
Baker, James T.	Jordan, Charles D.
Berg, Frank A.	LaGrone, C. L.
Boshell, Buris R.	Lawson, T. C., Jr.
Chandler, Adrian A.	Linton, Patrick H.
Cheek, George W., Jr.	McCue, Patrick
Clayton, Horace C.	McLaughlin, Robert J.
Coleman, Ermin E., Jr.	Motte, Elmer
Crews, Frederick F.	Nelson, Oscar T.
Cruit, Robert L.	Norvell, Samuel S.
Curtis, Earnest M., Jr.	Palmer, Stephen D.
Davies, James S.	Porch, Ellis F.
Douglas, William W.	Primm, Chester B.
Duncan, John E.	Riley, Oscar, Jr.
Enslen, Phillip J.	Stanley, James F.
Finlay, William C.	Stephens, S. H., Jr.
Floyd, Homer H., Jr.	Tew, Walter C., Jr.
Golden, Clarence L.	Thuss, Chauncey B.
Griffin, Arthur	Vaughn, James D.
Guyton, Robert D.	Walker, William A.
Hammack, William J.	Whitehead, Leslie E.
Harris, Herschel B.	Wright, James G., Jr.
Holt, Douglas C.	Wright, William T.
Hughes, Hugh J.	Yow, John S., Jr.

CERTIFICATES GRANTED APPLICANTS COMPLETING  
INTERNSHIPS JULY 1, 1953

Bargerion, L. M., Jr.	Kirkland, Lewis E.
Bates, James S., Jr.	Lamberth, Lewis M.
Beddow, Charles P.	Lightfoot, R. M.
Blanton, Harold L.	Lowry, Mary Ellen
Burt, Charlie H.	Martin, Robert L., Jr.
Calhoun, Wallace E., Jr.	Maxwell, Benjamin C.
Carter, William L., Jr.	Merchant, John P., Jr.
Childs, Hoyt Abner	Norman, W. R., Jr.
Coker, James W., Jr.	Norris, Woodfin G., Jr.
Cook, Malcolm C.	Penton, George B.
Devane, Frederick H.	Phillips, S. C., Jr.
Duke, Joseph E.	Pitts, William R.
Edwards, John A., Jr.	Price, Cecil E.
Flynn, Thomas J.	Robinson, Carl R.
Garrett, Steiner D., Jr.	Rudder, William H.
Glass, Henry G.	Seay, James E., III
Gray, Sidney J., Jr.	Sherrill, Fred O., Jr.
Hannon, Kenneth M.	Sherrill, John D., Jr.
Holcomb, Maurice C., Jr.	Sims, Marion H.
Holland, Claude M., Jr.	Skinner, Henry F., Jr.
Jackson, Benjamin B.	Spruiell, Vann E.
Jackson, James S., Jr.	Thomas, Henry D.
Jarrett, Melvyn C.	Thomas, Julius O.
Johnson, Richard H.	Till, Walter H.
Kent, Edwin B.	Walker, Rhett P.
Kimbrough, James E.	

RECIPROCITY APPLICANTS APPROVED DURING  
THE CALENDAR YEAR OF 1953

Adams, Allan B.—N. B. M. E.	June 30, '53
Agee, Ernest B., Jr.—Va.	Apr. 15, '53
Aijian, Karl M.—N. B. M. E.	Nov. 13, '53
Baird, Glenn Harris—Kansas	Aug. 10, '53
Beatty, Dan Troy—La.	Nov. 23, '53
Bennett, Claude E.—Ga.	Dec. 8, '53
Benson, Joseph R.—Ga.	July 6, '53
Bethany, Joe J.—N. B. M. E.	Sept. 21, '53
Blassingille, Benjamin—Tenn.	Sept. 21, '53
Bledsoe, William W., Jr.—Ga.	Jan. 14, '53
Bridges, Thomas E.—Ga.	May 13, '53
Brock, Ernest C., Jr.—N. C.	Sept. 28, '53
Calix, Arthur A.—La.	Dec. 29, '53
Carpenter, Eugene—N. B. M. E.	Jan. 6, '53
Carson, Arthur J.—La.	June 24, '53
Cleveland, Webster, Jr.—Miss.	May 13, '53
Cohen, Robert S.—Ark.	Apr. 15, '53
Crone, Richard D.—N. B. M. E.	Jan. 5, '53
Davis, Charles Elmer—Ky.	July 16, '53
Doherty, William R.—Ohio	Dec. 21, '53
Donald, William D.—Tenn.	Jan. 6, '53
Eddleman, Elvia E., Jr.—Ga.	July 27, '53
Everest, Paul Daley—Wis.	Feb. 3, '53
Fagan, Philip J.—Ore.	Sept. 2, '53
Fedack, William J.—Pa.	Feb. 9, '53
Finley, Dorothy G.—N. C.	July 16, '53
Ford, Robert L.—Tenn.	Dec. 29, '53
Foster, Paul S.—La.	Nov. 10, '53
Grace, Joseph B.—Minn.	July 13, '53
Greenberg, Harry L.—Va.	Nov. 23, '53
Halliday, George B.—La.	July 13, '53
Harden, William E.—Ga.	July 13, '53
Hathaway, Beulah M.—Va.	Jan. 14, '53
Haughton, Lemuel D., Jr.—La.	June 24, '53
Hawley, William L.—Mass.	May 27, '53
Henry, Russell C.—Okla.	July 13, '53
Herren, Wood S.—Md.	Nov. 13, '53
Hewitt, Lawrence B.—W. Va.	Dec. 21, '53
Higginbotham, John M.—Tenn.	Sept. 28, '53
Hinshaw, Arvil J.—Texas	Feb. 26, '53
Hofammann, Karl E., Jr.—Md.	Sept. 28, '53
Hovick, Jack H. O.—Md.	Dec. 29, '53
Howard, Frank D.—Ky.	Sept. 24, '53
Jacobs, Moody D.—La.	June 24, '53
Johnson, Andrew B., II—N. B. M. E.	July 16, '53
Johnson, Charles M.—Minn.	Aug. 10, '53
Kartus, Sam—La.	June 24, '53
Kelly, Thomas G.—Ga.	June 30, '53
Kenney, Howard W.—Tenn.	Feb. 13, '53
Lerner, Ernest N.—La.	Apr. 15, '53
Lies, William, III—N. B. M. E.	Apr. 6, '53
Lindeau, Burton—La.	Feb. 13, '53
Martin, John Owen—Ky.	Jan. 26, '53
McCrary, George A.—Ga.	Jan. 26, '53
McDaniel, William Y.—La.	June 19, '53
McElfresh, Arthur E., Jr.—N. B. M. E.	Feb. 25, '53
Middleton, James G.—Tenn.	July 6, '53
Mitchell, James A.—La.	July 1, '53
Morgan, James M., Jr.—La.	Aug. 10, '53
Morgan, Snead W.—Tenn.	Oct. 9, '53
Moriarty, Richard W.—N. Y.	Mar. 18, '53
Moseley, Samuel O., Jr.—La.	Sept. 2, '53
Moss, Charles S.—Tenn.	June 24, '53
Neal, William B., Jr.—Ill.	Dec. 29, '53
Nicholson, George B.—S. C.	Sept. 2, '53
Nolan, Thomas C.—Ga.	July 8, '53

Parks, Charles T.—Ga.	Mar. 9, '53
Pennington, William S.—Tenn.	May 1, '53
Phillips, Jim S.—Texas	Apr. 15, '53
Pittman, John E., Jr.—La.	July 16, '53
Proctor, George T.—Tenn.	Sept. 2, '53
ReMine, Philip G.—Va.	Oct. 1, '53
Rickerd, Charles L.—Ohio	Sept. 24, '53
Roberts, James A., Jr.—La.	Sept. 21, '53
Rogers, Mack Ray—Miss.	Oct. 27, '53
Rundles, William R.—Ohio	Oct. 9, '53
Saville, Alphonso F., Jr.—Tenn.	July 13, '53
Shriner, John F.—La.	Sept. 2, '53
Smith, Henley J., Jr.—Tenn.	Jan. 14, '53
Smith, Rayford A., Jr.—La.	June 23, '53
Stevens, Alexander C.—Texas	July 13, '53
Thompson, Harvey J., Jr.—W. Va.	May 11, '53
Tourney, Robert L.—Ill.	June 24, '53
Tunstall, Peyton R., Jr.—La.	Oct. 9, '53
Walters, Conrad R.—Ill.	July 23, '53
Ward, James A., Jr.—La.	Oct. 2, '53
White, Kathleen E.—La.	Dec. 29, '53
White, Kathleen R. W.—Neb.	Dec. 14, '53
Williams, Walter S.—Col.	Oct. 9, '53
Wiser, Winfred L.—Tenn.	Aug. 17, '53
Yoe, Robert Hoyt, Jr.—Tenn.	Aug. 10, '53
Zayac, Edward J.—Ill.	Dec. 21, '53

CHIROPODY RENEWAL LICENSES GRANTED FOR  
1953

Alexander, Isadore H.	Leighty, Fred G.
AuCoin, William J.	Lewis, Martin
Austin, Elizabeth Sealy	Miller, John
Benitez, George W.	Oxford, H. R. A.
Blotzer, Ellen L.	Pearson, Joe P.
Blotzer, John S.	Peterson, Bessie C.
Clark, George E.	Plevine, Erich H.
Coleman, Jasper C.	Rae, Hugh
Cooper, John M.	Riccio, Peter D.
Crowley, Coy H.	Rollings, Harry H.
Crowley, Gentry B.	Sealy, Ariel L.
Davis, Edith M.	Sealy, Edward E.
DeViso, Viola	Silverman, Isidor
Dixon, Mildred K.	White, Juddie B.
Draper, William L.	Wittick, Arthur, Jr.
Edwards, Charles M.	Wright, Thomas L.
LeCroy, Thomas H.	Young, Frank N.

*Part II of the Board's report was approved.*

PART III

REPORT OF THE BOARD OF CENSORS AS A  
STATE COMMITTEE OF PUBLIC HEALTH

D. G. Gill, M. D.  
State Health Officer

PREFACE

Some of the activities of the Health Department are included in the detailed reports that follow but it is only possible to bring to your attention a few of the accomplishments. The year 1953 was no exception to the pattern of high birth rates and low death rates, but it is encouraging to record fewer deaths from causes associated with childbirth and extremely low death rates from the diseases with means of prevention available. Only four deaths from measles, four from whooping cough, eight from diphtheria, and one each from malaria and typhoid are enviable

records. The saving of another 100 lives from tuberculosis as compared to 1952 records emphasizes the change in the outlook from this disease. The State increased its contribution towards the cost of maintaining tuberculosis sanatoria and a beginning was made towards the construction of another regional hospital at Gadsden.

The occurrence of an epidemic of poliomyelitis in Montgomery led to the trial of gamma globulin as a means of suppression. The citizens of the county gave wholehearted support to the leadership of the practicing physicians and as a result some 33,000 children were inoculated in a period of four days. In so far as this effort was concerned there seemed to be some evidence of effectiveness.

At long last a beginning was made on the construction of a building to house the central laboratories. The completion of this and the completion of the State Office Building will permit adequate housing for the State Health Department. Additional county health department quarters are improving the situation in many areas of the State.

Continued cuts in federal grants are creating more and more problems in financing health work and it is impossible to give the services available at one time.

ADMINISTRATION

HOSPITAL CONSTRUCTION

During the calendar year 1953 a total of 494 general hospital beds were added to Alabama's public, non-profit and private hospitals. Of these, 280 were added by completion of eight hospitals under the Hill-Burton program. A net gain of 214 was made through the hospital licensure program. Two public health centers were completed during the year.

Facilities completed under the Hill-Burton program were:

Facility	Location	Type	Beds
Washington County Hospital	Chatom	Gen.	20
South Pickens County Hospital	Aliceville	Gen.	30
Conecuh County Hospital	Evergreen	Gen.	34
North Pickens County Hospital	Reform	Gen.	30
Bryan Whitfield Memorial Hospital	Demopolis	Gen.	29
Lawrence County Hospital	Moulton	Gen.	40
Randolph County Hospital	Roanoke	Gen.	35
Holy Family Hospital	Birmingham	Gen.	62
Franklin County Health Center	Russellville	PHC	
Fayette County Health Center	Fayette	PHC	

As a result of a further reduction of the federal appropriation, the end of the year saw only six projects under construction, with seven scheduled for construction before the next federal fiscal year. Projects under construction and approved for construction include:

Facility	Location	Type	Beds
District IV Tuberculosis San.	Gadsden	TB	140
Barbour County Hospital	Eufaula	Gen.	50
D. W. McMillan Mem. Hosp.	Brewton	Gen.	35
Lauderdale County Health Center	Florence	PHC	.....
Enterprise Health Center	Enterprise	PHC	.....
State Health Dept. Laboratory	Montgomery	PHL	.....
Marengo County Health Center	Linden	PHC	.....
St. Margaret's Hospital (Annex)	Montgomery	Gen.	93
Arab Hospital	Arab	Gen. & PHC	20
Jackson County Hospital	Scottsboro	Gen.	35
Eastern Health Center	Birmingham	PHC	.....
Geneva County Hospital	Geneva	Gen.	30
Chilton County Hospital	Clanton	Gen.	40

At the end of the year the Division had on file applications for the following projects:

Type	Number of Projects	Beds
General Hospitals .....	35	1287
Tuberculosis Sanatoria .....	2	263
Chronic Disease Hosp. ....	2	187
Public Health Centers .....	11	.....
Schools of Nursing .....	5	.....
	55	1737

Of the 55 applications on file at the end of the year, 14 were received during the year. Of the applications for general hospitals, 15 were for additions to existing facilities, two were for replacement of obsolete facilities and seven were for the construction of supplementary facilities to existing hospitals. This latter category consists of small hospitals to be operated by the local county hospital authority as supplementary facilities to existing hospitals. The remaining 11 were for new facilities. Both applications for chronic disease hospitals were received during the year.

HOSPITAL LICENSURE

During the year licenses were issued to 140 general hospitals, 25 clinic hospitals, 74 nursing homes and two maternity homes. Of the 241 licenses issued, 209 were regular licenses. Thirty-two temporary licenses were issued to facilities with corrective action incomplete or for which

replacements under the Hill-Burton program were being planned. Five institutions were closed for failure to comply with the regulations, and one hospital was converted to a nursing home.

The Hospital Planning Division assisted the Alabama Hospital Association and the Hospital Service Corporation of Alabama (Blue Cross) in the preparation of a uniform accounting system for small hospitals. With the approval of the system, members of the Division assisted in conducting four accounting workshops to explain it. In cooperation with the University of Alabama and the Alabama Hospital Association, the Division began plans for a dietary and nutrition workshop to be conducted at the University in the spring of 1954.

A bimonthly publication entitled *News and Notes* was inaugurated in May. It is devoted to news of interest to both hospitals and nursing homes and covers both the licensure and construction programs.

Personnel of the Division were appointed to the Welfare Advisory Committee and the Evacuation Advisory Committee to the State Department of Civil Defense, representing the State Health Department.

Three members of the Division attended the Southeastern Regional Conference on Hospital Construction in Charleston, South Carolina, where the director presented a paper entitled "Planning for Nursing Homes." Four Division members attended the annual meeting of the Alabama Hospital Association. The director attended the conference on the Hill-Burton program conducted by the American Hospital Association in New Orleans.

#### MENTAL HYGIENE

In 1953 the Division of Mental Hygiene continued its efforts to merge a public health approach and a team approach of a psychiatric clinic into a program of providing primary and secondary prevention services to the State. This program consists of community organizational, educational, consultative, clinical and research services.

##### I. Community Organizational Services

A. Members of the Division's staff met with numerous local groups throughout Alabama to help the latter gain an understanding of the mental health needs of their communities and possible means of meeting such needs.

B. The Division's staff worked with the health officers of Montgomery, Lee, Madison and Calhoun counties in preparing these communities for mental health services.

C. Members of the staff met with various state organizations to secure their participation in meeting the mental health needs of the State.

##### II. Educational Services

###### A. Staff Training

1. One clinical psychologist went on educational leave for the 1953-1954 academic year to complete work on a Ph. D. degree and will return to work with Negro groups in Alabama.

2. An in-service staff meeting was held for the five mental health clinics' personnel. The conference considered program planning, community organizational techniques and human relations skills.

3. Scholarships to attend workshops and institutes were made available to local mental health clinic personnel.

###### B. Pamphlets and Bulletin

1. The Division continued to distribute three pamphlets on the mental health of children.

2. *The Alabama Mental Health Bulletin*, with a mailing list of 6,000, was published for nine months.

###### C. Films

The Division operated a library of 48 mental health films. Total estimated audience was over 100,000.

###### D. Speeches, Workshops and Demonstrations

The Division staff presented mental health programs to public health nurses, teachers' groups, hospital staffs, college staffs and other professional and lay groups.

###### E. Grants-in-Aid

The University of Maryland Child Study Program was extended to additional counties, and the University of Alabama Family Life Program co-sponsored by the Division was extended to additional cities. The parent education program was made available to the cities of Mobile and Montgomery.

#### III. Consultation Services

The Division's consultative program included services to the State Department of Education, State Department of Public Welfare, Alabama Association for Mental Health, governmental departments in numerous cities, and the county societies of mental health.

#### IV. Clinical Services

The Division continued its support to the five community mental health clinics in the State. Although each of these clinics suffered a cutback in state funds, local support was obtained by them to continue their first-aid mental health services.

#### V. Research

Recognizing the great need for research in mental health, the Division initiated in 1953 a program of "action research"—research designed to evaluate and improve its present preventive program. It is cooperating with the Jefferson County Industrial Health Council, Troy State Teachers College and Bryce Hospital on their research undertakings.

#### MACHINE TABULATION

Acting in the capacity of a service unit, the Division of Machine Tabulation processed during 1953 work for the various bureaus and divisions of the State Health Department.

For the Bureau of Preventable Diseases, indexes and statistical reports were prepared; also

the monthly and quarterly reports on venereal disease for the U. S. Public Health Service and the State Health Department. The communicable disease statistics that appear in the annual report were prepared for this Bureau. A central registry of venereal disease contacts was operated for the Division of Venereal Disease Control. Reports on contacts named and the disposition made by the counties of these contacts were prepared monthly, together with various annual and semi-annual reports. Beginning July 1st, 1953, the reports from the three Prevention and Control Centers were transcribed to punch cards. From these cards statistical monthly reports were prepared. Approximately 33,500 polio records were transcribed to punch cards, and indexes and statistical reports were prepared for the Montgomery County Health Department and the Bureau of Preventable Diseases.

At the request of the director of the Division of Cancer Control a reporting system for cancer cases was designed and adopted. This was put into operation January 1st, 1953.

Data from birth, death, marriage, divorce, stillbirth, accidental death and infant mortality certificates were transcribed to punch cards, and indexes and monthly, quarterly, semi-annual and annual reports were prepared. Also, the re-indexing of divorces, deaths and marriages from 1949 through 1952 was completed.

For the Bureau of Maternal and Child Health an annual report on selected information from county activity reports was tabulated.

A summary of the activities of the county health departments was prepared for the Bureau of County Health Work.

Miscellaneous reports were prepared for the Bureau of Sanitation.

A request was made by the Bureau of Laboratories for a statistical report of premarital blood tests. Twenty-five thousand, eight hundred and forty-three records were transcribed to punch cards for this operation. Reports of laboratory specimens, Kahn and V. D. R. L. from doctors' offices and hospitals were transcribed to punch cards, and comparative tests were made and monthly reports were mailed to the doctors' offices and to hospitals.

Quarterly reports were made for the Division of Finance. Also special budget records were transcribed to punch cards for comparison, listing and indexing.

For the Alabama State Health Department as a whole, 770,236 cards were processed.

#### DIVISION OF PUBLIC HEALTH EDUCATION

In 1953, as in earlier years, the Division of Public Health Education devoted itself to the task of conveying helpful health information to the people of Alabama. Also as in the past, it relied mainly upon the conventional mass media.

The daily and weekly newspapers and the radio stations gave the Department the same kind of hearty cooperation they have accorded it in the past. Thanks to it, there is reason to believe that all segments of Alabamians have been reached with health messages, not sporadically or spas-

modically but steadily and constantly. The Division appreciates it.

The two Montgomery dailies published 514 news and feature articles based upon releases issued by this Division. This represented a slight increase over the 1952 total of 509. There was no means of determining or even approximating the frequency with which the Montgomery radio stations broadcast this material, but indications are that it was widely used. The same is true of the weekly papers and the dailies outside Montgomery, which received weekly releases prepared especially for them and issued in mimeographed form. As in the past, copies of the daily releases were sent to the Montgomery dailies and radio stations and the principal news services. Thus practically every newspaper and radio station in the State regularly received material from this Division, either directly or through the news services.

The Associated Press continued to receive the weekly State Health Chats, brief articles dealing with health subjects, localized as far as practicable to Alabama.

The weekly radio talks were heard on 15 stations by means of tape recordings. Thus, one of these talks was broadcast about every eight hours throughout the usual 18-hour broadcast day. An attempt was made to maintain variety of subject matter, without, however, failing to place the proper emphasis upon diseases and health problems of particular importance to Alabamians. As in several previous years, this Division assumed responsibility for the entire broadcasting program—writing of the scripts, their transfer to electronic tape on the Department's own equipment, testing of the tapes, their distribution to the 15 cooperating stations and the return of the used tapes for erasure and re-use.

The mimeographing of the radio scripts, a practice which began with the opening of this Division in 1938, has provided a reservoir of health education material for those wishing it. Copies have also gone to county health departments, the State Health Department's own bureaus and divisions, state health departments all over the United States and in other countries, and individuals and organizations which have requested that they be supplied regularly. The practice of substituting address sheets for envelopes in the mailing of these scripts, begun in 1952, has saved the Department a substantial sum.

Sixty-four county health departments were members of the Film Library, some borrowing films frequently, others infrequently and still others quite seldom. Some of the borrowers obtained them for use by county health department staff members. Others booked them for local individuals and organizations requesting them.

The Department (which now pays the shipping charges on all outgoing films except those which are shipped by express) was able to make a substantial financial saving as a result of a Post Office ruling allowing an unusually low parcel post rate for educational films.

The Division has long had difficulty in obtaining information regarding the showing of Film

Library films—the number of times shown, the total audience, audience reaction, etc.—as a result of a failure on the part of many borrowers to return the enclosed cards. A special effort was made during the year to obtain this information by means of follow-up cards. It has brought a marked increase in the number of cards returned.

The limited information at hand shows that the Film Library films sent out during the year on 478 bookings were seen by 56,456 people. Both bookings and total audience were under those for 1952.

The Library was at the service of staff members and others throughout the year. Handicapped as it is by extremely cramped quarters, it could offer only limited and, on the whole, unsatisfactory facilities for those wishing to use its books and journals in the building. A few books were added during the year. The medical journals proved of much the greatest service to library users. About 250 volumes of them were bound, the first to be since 1947.

The Division edited the Department's annual report, distributed health education material in booklet and mimeographed form, furnished information by correspondence and carried on the other usual functions it has performed in the past. It also cooperated with various other official and unofficial agencies.

The entire year was spent in the Division's temporary quarters at 320 Dexter Avenue. It is hoped that space and facilities more nearly in line with its needs will be available in the new state office building, to be occupied in late 1954.

#### COUNTY HEALTH WORK

The following consolidated report embracing the state's 67 counties reflects the principal activities and accomplishments in county health work in 1953:

##### Communicable Disease Control

Admissions to service.....	7937
Consultations with physicians.....	1739
Field visits.....	4520
Smallpox vaccinations.....	63530
Diphtheria immunizations.....	4568
Typhoid fever immunizations.....	273205
Pertussis immunizations.....	426
Triple vaccine.....	84007

##### Venereal Disease Control

Admissions to service.....	17071
Office and clinic visits.....	46546
Field visits.....	17507
Number of treatments given.....	15284

##### Tuberculosis Control

Individuals admitted to service.....	30648
Office and clinic visits.....	51544
Field visits.....	36233

##### Maternity Service

Cases admitted to service.....	39278
Office and clinic visits.....	57164
Cases given postpartum medical examinations.....	4897

Nursing visits.....	41709
Maternal death investigations.....	17

##### Infant Hygiene

Individuals admitted to service.....	31429
Office and clinic visits.....	29716
Nursing visits.....	53597
Neonatal death investigations.....	105

##### Preschool Hygiene

Individuals admitted to service.....	27631
Office and clinic visits.....	26758
Nursing visits.....	30036

##### School Hygiene

Inspections by physicians and nurses.....	92141
Examinations by physicians.....	17964
Individuals admitted to nursing service.....	5003
Nursing visits.....	11212

##### Adult Hygiene

Medical examinations.....	8549
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##### Morbidity Service

Cases admitted to service.....	4547
Office and clinic visits.....	4492
Field visits.....	7141

##### Cancer Control

Individuals receiving diagnostic service.....	921
Individuals receiving treatment service.....	1157
Individuals admitted to nursing service.....	360
Field visits.....	1247

##### Dental Correction Service

Individuals admitted to service.....	9259
Office and clinic visits.....	14673
Inspections by dentists and dental hygienists.....	10114
Prophylactic treatments given.....	6932

##### General Sanitation

Approved individual water supplies installed.....	704
Approved excreta disposal systems installed.....	7513
Field visits.....	114273

##### Protection of Food and Milk

Food-handling establishments registered for supervision.....	15386
Field visits to food-handling establishments.....	78866
Dairy farms registered for supervision.....	4647
Field visits to dairy farms.....	24785
Milk plants registered for supervision.....	688
Field visits to milk plants.....	7386

##### Special Control Services

Impounded water projects registered for supervision.....	2284
Field visits to impounded waters.....	4031
Premises dusted for typhus control.....	11565
Field visits in typhus control.....	24025

##### Laboratory

Specimens examined.....	509601
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## NURSING ACTIVITIES

The staff of the Division of Public Health Nursing consisted of the director, two general consultant nurses and one clerk-stenographer. The staff is still far from adequate. A nurse epidemiologist from the Communicable Disease Center in Atlanta was a welcome loan. Even though her function was primarily in epidemiology, she was invaluable in her contributions to the nursing staff.

During the year there were 51 appointments and 45 resignations in the counties. This number, which represented about one-fourth the entire county nursing personnel, meant that the on-going of the program was handicapped. Marriage, pregnancy and better-paying positions accounted for the majority of the resignations.

The consultant nurses participated in their professional nursing organization as officers and committee chairmen. One attended the meeting of the International Council of Nurses in Brazil. Recruitment of student nurses, both professional and practical, was a year-round activity. Encouragement was given to the county nurses to assist in the organization of Future Nurses' Clubs in high schools.

*Educational Activities*

Although there was practically no money set aside for nurse education, much was accomplished through the Extension Centers of the University of Alabama and Tuskegee Institute. Fifty-eight nurses took advantage of courses given in this manner and earned during the year from 3 to 25 hours of credit each. This was financed individually for the most part but partly by funds from the Children's Bureau.

Six public health nurses studied one quarter each at Tuskegee Institute; three had one quarter each, one two quarters and two three quarters at Peabody College. Two hospital nurses had one semester each at Vanderbilt, taking advanced maternity nurse courses.

Two hospital and two public health nurses had intensive one-week courses in cancer nursing at the University of North Carolina.

Ten nurses attended a four-day workshop on poliomyelitis. A film, "Emergency Blood Collection and Administration," was widely shown to nurses throughout the State.

Fifty nurses took the Red Cross first aid course. Institutes and workshops on the following subjects, among others, were well attended: heart, tuberculosis and mental hygiene.

Two nurses attended the annual meeting of the Society for the Prevention of Blindness in New York; two attended a workshop on public health nursing in Nashville.

One of the highlights of the year was a series of three institutes on the care of the premature infant conducted by Dr. V. Mary Crosse of England. The attendance of 258 included nurses from all fields and some physicians. During the year three public health nurses and one hospital nurse had three week courses (non-credit) at Duke University Hospital; four public health and

three hospital nurses had six week (credit) courses at Charity Hospital, New Orleans, and one public health nurse had three weeks at Crawford Long Hospital, Atlanta, in the care of premature infants.

Because of continuing low salaries we were unable to employ prepared public health nurses. During the year seven nurses were given two weeks of orientation at either Opelika or Huntsville. As there were 27 new nurses appointed in the counties, exclusive of Jefferson and Mobile, this meant that the remaining 20 had to wait for assistance until one of the three supervisors could get to them. Lack of funds to finance additional orientation and the fact that many have family responsibilities which prohibit their leaving home account for this small number of nurses having this opportunity.

*Special Activity*

One of the most spectacular activities in which the members of the Division participated was the administration of gamma globulin to 33,000 Montgomery city and county children within a four-day period. The entire staff spent a week organizing and working with the nursing part of this program. Fifty public health nurses from various counties were called in to assist. Fifteen Army nurses were loaned, and 77 nurses from other fields volunteered their time and services.

## MERIT SYSTEM

During 1953 the Merit System for County Health Work conducted competitive examinations on an open-continuous basis for the following classes: Clerk I and II, Typist I and II, Sanitation Officer I, II, III, Scientific Aide, Sanitation Assistant, Public Health Engineer, Graduate Registered Nurse I and II, Public Health Nurse I and II, Milk Inspector I and II, Public Health Veterinarian I and II and Psychiatric Social Worker. Examinations for several other classes were open but no applications were received. The classes of Meat and/or Milk Inspector I and II were abolished, and the examination for Dental Hygienist was closed. The number of applications received for the above examinations totaled 106, of which 99 were acceptable and 99 also appeared for the examinations. From this number, 94 applicants made passing grades, five failed and 94 names were placed on the eligible registers. There were 52 appointments made from these registers and 25 appointments from eligible lists established previously.

In addition to appointments from eligible lists, a total of 23 positions were filled on a provisional, temporary, emergency or custodial basis. There were 77 separations from service, which included 49 resignations, three dismissals, three lay-offs, 20 expirations of provisional, temporary, or custodial appointments, and two separations due to death.

The Merit System Council approved revised salary ranges for the classes of County Health Officer II and III. The Council also approved the adoption of the following new classes: Psychiatric Social Worker, Public Health Veterinarian I and II, Milk Inspector I and II. Salary ranges were approved for each class.

## LABORATORIES

The Bureau of Laboratories examined 544,007 specimens during 1953, as compared to 612,686 in 1952. The Birmingham Branch Laboratory ran 200,445 of the specimens, followed closely by Montgomery with 164,798. Part of the decrease in the number of specimens was due to a curtailed venereal disease program, as compared to recent years. The decrease in specimens also does not reflect the work load of the laboratories, since many more complicated procedures are being applied to the specimens received, which are time-consuming and tedious.

*Diagnostic Section*—An interesting project was started this year in this section, in which all of the children in Covington County were to be examined, treated, and reexamined and treated where necessary for hookworm. In addition to hookworm, the material was restudied at a later date for the presence of amebic dysentery. This work is to continue into 1954.

*Tuberculosis Section*—Specimens numbering 38,305 were cultured and examined for tuberculosis in this section, with 5,478 found positive. Of these specimens, 639 showed acid fast saprophytes rather than tuberculosis. The research program devoted to comparison of different media for tuberculosis was eventually finished and published.

*Evaluation of Private and Hospital Laboratories*—Licenses, in addition to those issued to the branch laboratories, have been issued to 34 private laboratories for the performance of premarital blood tests. As in 1952, specimens were sent at monthly intervals to evaluate the performance of each laboratory. The number of laboratories increased from 22 in 1952 to 34 in 1953, plus the branch laboratories, giving a total of 44 laboratories offering this service to the State. The branch laboratories ran a total of 34,045 specimens. No permits were withdrawn except where the technicians left their positions and the hospitals were unable to replace them.

*Rabies*—There was a 13% increase in rabies-positive heads in 1953, the bulk of which was concentrated in the Birmingham area. Seventeen hundred fifty two heads were examined in 1953, as compared to 1,222 examinations in 1952.

*Milk and Water*—The milk and water laboratory showed an increase in the amount of work as compared to previous years but at the present time it has about reached the peak of its ability to do work due mostly to lack of space, which should be remedied in part by the new building under construction.

Other sections of the laboratory have been carrying on several research investigations and have continued to investigate newer and better methods for examination. The Parasitology Department has now attained sufficient experience and training so that it is felt it is able to give competent and reliable service to physicians.

## MATERNAL AND CHILD HEALTH

During 1953 Dr. William G. Paul was added to the staff of the Bureau of Maternal and Child Health as director. The Bureau had been with-

out a full-time director since December 1951. Dr. Paul has encouraged the work of the counties in their maternity and child health programs by personal attendance and advice to clinicians and health officers.

Miss Thelma Walker, the consultant nurse who was given a scholarship for special training in the care of mothers and young children, completed her training in July and joined the staff in August 1953. With the help of this nurse, classes for expectant mothers and fathers have been organized and staff meetings of county nurses have been started. Supplies are being well distributed, because of her close supervision and notice to the central office of supplies and equipment needed.

The School of Dentistry of the University of Alabama at Birmingham held a refresher course in pediatric dentistry again this year. The dentists were most eager to attend this school of lectures, demonstrations and clinical practices for children. The course was co-sponsored by the Bureau of Maternal and Child Health.

During the year two isolettes were furnished to the Medical College of Alabama at Birmingham for use in the care of premature infants.

There is much interest in the prenatal, well baby and dental clinics throughout the State. There were 3,361 maternity clinics conducted in 49 counties with 49,882 patients admitted and 149 physicians participating.

There were 1,863 well baby clinics held in 23 counties, with 70 physicians attending and 36,233 patients admitted.

A total of 1,478 dental clinics was held in 34 counties during the year. Participating in this program were 70 dentists, and 12,307 patients were admitted.

At the end of the year 89 incubators had been placed in 54 counties. Ten of these incubators were distributed during the year.

The Bureau continued to furnish funds to provide pertussis and triple vaccine immunization to children and infants unable to afford this protection through other sources.

The reporting of every maternal death occurring during 1952 which was sponsored by the Association's Committee on Maternal and Child Health and the Bureau of Maternal and Child Health, was completed, and the material is in the hands of the printer.

There is still much work to be done toward reducing maternal mortality in Alabama.

## MACON COUNTY MATERNITY AND INFANT CARE PROGRAM

The Macon County Maternity and Infant Care Program continued to provide care for colored maternity cases and sick infants. The pathological obstetric clinic, where suspected abnormal cases are referred for laboratory tests or x-ray examinations and obstetric consultation, continued in operation. Statistics for this program will be set forth in the annual report of the State Department of Health.

## NUTRITION

No area in public health offers a greater opportunity for service at the "human frontier"

than does the application of the newer knowledge of nutrition.

This service is of an educational nature and includes direct service to individuals and groups in an effort to help people solve various kinds of nutritional problems; promoting clinical services through exhibits, talks and demonstrations; emphasis on consultation with the public health nurses, in school health programs, at teacher-training institutes and workshops for school lunch managers; professional in-service training for personnel in the dietary department in small hospitals and child caring institutions; and co-ordination and integration of nutrition services with all state and local agencies. To be effective, nutrition education must retain practical knowledge and information about human behavior or people we attempt to teach.

#### PREVENTABLE DISEASES

Many of the communicable diseases remained within their normal range, while others swung upward or downward.

Although poliomyelitis was not expected to hit its hammer blow for another three years, it struck sharply in a limited area and brought the year's total to 449 cases. This was an increase of 152 cases over the previous year. The year began like any previous non-epidemic year and, then, suddenly in Montgomery County an epidemic began to form. By the end of June it was in full sway, and it was decided to try mass immunization with gamma globulin of all children under ten years of age in the county. There was an interval of less than ninety hours from the time of decision to the beginning of "operation needle." During these few hours dosage charts, instruction forms, diagrams of the flow of the children and instructions to the 1,140 people—doctors, nurses, medical corpsmen and volunteers—had to be ready for g. g. day at eight A. M. The coordinated team work of a community in action was demonstrated in the first patient who was processed and finished in twelve minutes. In the four days of "operation needle," 32,955 children were given a total of 197,013 cc. of gamma globulin. It was a massive job well done, and poliomyelitis was dealt a temporary knock-out blow.

There was a marked improvement in diphtheria, with 224 cases reported. This compares favorably with the 342 cases of the previous year. It is to be hoped this improvement continues.

Typhoid fever, like the bad penny, continued to be present in an ever-increasing way. There were 69 cases of typhoid fever and six of paratyphoid fever. This represents a 12-case increase of typhoid fever over the previous year. More and more emphasis must be placed on the preventability of this disease to bring it into line.

Perhaps the application of typhoid epidemiology and gamma globulin had the necessary salutary effect on infectious hepatitis, because the 934 cases reported were considerably fewer than the 1,232 of the previous year.

An epidemic of influenza roared into the State and struck down 79,169 individuals.

The hopelessness of rabies was only strengthened in the one case that occurred. Constant vigilance in insuring Pasteur treatment to humans bitten by rabid animals must be maintained.

There were 4,802 cases of cancer reported, with 662 of these being treated in the state tumor clinics. Although 1,303 applications for state aid were received, only 1,196 were eligible, and only 986 of these actually reported for clinic services.

The markedly reduced multiple screening program was carried to six counties, with only two counties having spot surveys for syphilis.

There were 108,542 persons x-rayed for tuberculosis, heart disease and other chest pathology. Of these, 112 had tuberculosis, 49 had heart disease, and 449 had other lung pathology. Many more cases of heart disease could have been found, but, because of budgetary restrictions, follow-up was not continued. From the diagnostic chest x-rays, 657 cases were found among the 31,070 people x-rayed. And from all sources 2,131 cases were reported. This reduced number of cases, as compared with the previous year (2,448) reflects perhaps, with the steady yearly decline in mortality rates, a beginning improvement in tuberculosis.

From the 35,327 individuals blood-tested, 170 new cases of syphilis were found. But from all sources 2,075 cases were reported. The steady decline of syphilis (2,751 cases were reported the previous year) continued to prove the effectiveness of epidemiologic investigation and of the treatment of contacts and cases.

#### SANITATION

##### PUBLIC WATER SUPPLIES

Despite the fact that approximately fifteen million dollars has been spent during the past four years for water works improvements in the State, fifty-seven major projects were completed during the year at a cost of approximately three and one-third million dollars. Upon completion of a project a permit to use is issued if it has been constructed in accordance with approved plans and specifications. Permits to construct were issued for the construction of forty-six projects to cost approximately four and six-tenths million dollars. The review of plans and specifications and conferring with consulting engineers regarding the water supply projects as referred to above constitute important phases of the two Water Division engineers' work.

A major activity is the general supervision of the 324 public water supplies on record, serving approximately two million people. Four new supplies were completed and put into operation during the year. To carry out the State Board of Health's responsibility in connection with water supply supervision, 248 of the water plants were visited once, twenty-nine were visited twice, seven were visited three times, and two were visited four times during the year. During these visits the general condition of the system, operating procedure, and bacteriologic and chemical quality of the water were noted. At the time of the visit the operating personnel were given any necessary instructions in proper operational pro-

cedures and the responsible officials were conferred with regarding water works problems and needs. As a further control of quality, the engineers reviewed the reports of bacteriologic analyses of 20,406 samples submitted to the Bureau of Laboratories. When the interpretation of the reports indicated the need, instructions were given the water works personnel so that the situation causing unsatisfactory samples could be corrected.

Several municipalities suffered from water shortages. Two, Tuscaloosa and Albertville, received considerable publicity. Both have taken definite steps to prevent recurrence. Several relatively small supplies developed shortages which were relieved in some locations by tapping sources not normally used.

Tuscaloosa and Sheffield continued to be the only supplies practicing fluoridation. Several others gave consideration to the addition of fluorine, and the subject continues to be much discussed.

The urgent need for additional personnel for water supply work increased during the year. The number of semi-public and school water supplies, serving many thousands of people but receiving little or no supervision from the State Health Department, continued to increase rapidly. Phases of the work, such as promotion of protected private water supplies, had to be neglected because of a lack of personnel.

The annual Short Course School for water and sewage works personnel, together with the meeting of the Alabama Water and Sewage Association, was held in June at the University of Alabama, in Tuscaloosa. This school and meeting, sponsored by the State Health Department, the University of Alabama and the Alabama Polytechnic Institute, were well attended. The Bureau of Sanitation has taken a leading role in this work. The Bureau, in addition, has assumed the responsibility of organizing and editing the Association's quarterly "Official Bulletin."

Water Division engineers continued to cooperate with the U. S. Public Health Service in the program of certifying supplies for use by interstate carriers. They also aided in the training of new sanitation officer personnel.

#### GENERAL SANITATION

During 1953 there were approved by the county sanitation officers, and reported to the Bureau of Sanitation, 1,446 pit privies, 5,887 septic tanks and 6,537 sewer connections, or a total of 13,870 new units of sanitation. This sanitation served 78,617 people of the State. Sanitation units totaling 885 and serving a population of 7,190 were restored to former usefulness and protection to the public health. It is thus seen that 85,807 people were benefited by the 14,755 new or restored installations.

The county sanitation officers are to be commended for their efforts on sanitation programs. It is gratifying to see that, in the face of the varied demands for his time on other environmental sanitation programs, the sanitation officer's interest in excreta disposal has not slackened. In fact, more sanitation units were ap-

proved and reported to the Bureau of Sanitation during the year than in 1952. The county sanitation officers should derive great satisfaction from their accomplishments. They should, however, continue to appraise their work to determine ways and means of increasing their achievements in the suburban and rural areas.

Cooperation with various Federal agencies (F. H. A., Veterans Administration, and Farmers Home Administration) was continued in the interest of sanitation. The revision of the Federal Housing Administration's "Minimum Requirements for Individual Water Supply and Sewage Disposal Systems" was completed and transmitted to county health departments. This revision, which is more in agreement with the State Health Department's requirements, has proved very beneficial. Certain problems in connection with inspection reports were discussed with the Federal Housing Administration, and field personnel were advised of conclusions reached.

Research on sanitation was continued, and encouraging results have been obtained thus far. It is anticipated that progress reports on this work will be presented as articles in the Journal of the Medical Association of the State of Alabama during the coming year.

#### INSPECTION ACTIVITIES

Our records indicate that at the end of the calendar year 1953 the State Department of Health was responsible for enforcing regulations governing the operation of 614 establishments. These included 194 hotels, 158 ice cream manufacturing establishments, 94 carbonated beverage plants, 99 slaughter houses, 14 crab meat picking and shrimp cooking plants and 55 oyster shucking plants. In this connection, it is noted that the total number of state personnel inspections compares favorably with those of previous years. This does not mean, however, that all responsibilities have been fully complied with or that additional programs are not necessary if adequate public health protection is to be assured. Motels, poultry processing plants, and general food establishment programs remain major problems. It is significant that approximately 3,000 food establishments were jointly inspected by state and county personnel, as compared with 9,000 in 1946.

An Act which states in part that "it shall be unlawful . . . for the judge of probate of said county, or for the city clerk of said municipality, to accept payment for, or to issue, a privilege license for the operation of any establishment governed by said regulations, unless the applicant for said license is in possession of a valid permit issued by the health officer for the operation of said establishment" was duly passed and approved September 17, 1953. It is anticipated that this one Act will provide a basis of operation for all food establishments subject to the present regulations within the State.

Regulations governing the inspection, production, processing and sale of milk in Alabama, as mentioned in the 1952 report, were not approved by the legislative body during its regular session. At the present time there are 94 pasteurizing

plants delivering approximately 150,000 gallons of milk a day to the consuming public.

Inspection of oyster and crabmeat processing establishments continued in a very satisfactory manner. The necessity of close supervision and maintenance of structures has been indicated. A surveillance sanitary program was conducted in the vicinity of the oyster beds adjacent to Mobile and Baldwin counties.

Regulations have been revised and amended in an effort to conform with new equipment and operational procedures. The lack of field personnel at the state level prevents proper interpretation and enforcement, which results in many disappointments.

#### INDUSTRIAL HYGIENE

The principal activities of the Industrial Hygiene Division during 1953 consisted of the completion of a countywide study of industries in Montgomery County, a study of the dust problems in the marble and granite-cutting industry throughout the State and a statewide study of the radiation hazard in connection with the use of fluoroscopic shoe-fitting machines. In addition to these specific studies, an investigation was made of an air pollution problem in Tuscaloosa. All normal nuisance complaints were considered, and routine requests for services were complied with.

In all, 174 visits were made to a total of 152 different plants and business places. These industries have an estimated labor force of 8,500 employees and are located in 39 separate counties throughout the State.

Laboratory and field determinations included dust count determinations, free silica analyses, lead, mercury and arsenic in urine, lead and parthion in air, hydrogen sulphide and carbon monoxide determinations, velocity measurements, radiation intensities and others.

#### VECTOR CONTROL

The Division of Vector Control was created in 1952 by combining the Division of Malaria Control and the Division of Typhus Control and adding responsibilities for those phases of sanitation which are closely related to the production of mosquitoes, flies and rats.

The impounded water regulations for the purpose of controlling the breeding of malaria-carrying mosquitoes remained in effect throughout 1953. There were 27 major impoundages with one new one, Demopolis Reservoir, under construction. Control of *Anopheles quadrimaculatus* production was generally satisfactory, with two exceptions. Gantt Lake reached a very high *Anopheles* production peak at one time during the summer but was readily brought under control by the prompt lowering of the water level and the inauguration of a larviciding program. Little cooperation was obtained from the owners of Big Creek Lake. Mosquito collections were made by the owners sporadically and reporting was almost nil.

Several joint inspections of the Demopolis Reservoir area were made by members of this Division and representatives of the U. S. Engi-

neers Corps. Satisfactory agreements were made for minor modifications to suit local conditions in various portions of this proposed reservoir.

Minor impounded water projects continued to increase rapidly. Without any great pressure from this Division the average standard of construction was very good. This was in no small measure due to the excellent cooperation of the Division of Game, Fish, and Wildlife of the Conservation Department.

Rural residual house spraying programs declined somewhat from the previous year because of the decline in assistance derived from the Communicable Disease Center of the U. S. Public Health Service. Marengo and Crenshaw counties, however, carried on this type of work on a countywide basis, and selected local areas were treated in several other counties.

Municipal fly- and mosquito-control programs were operated in 36 municipalities. In most instances it was possible to loan CDC vehicles to these municipalities for this type of work. No other assistance, except consultative services, was given. In approximately one-third of these municipalities rodent control work was carried on in conjunction with insect control.

The Colbert County malaria control drainage program continued on a limited basis. The remaining major ditching which had been recommended was completed, and a small crew worked throughout the summer on the maintenance of previously constructed ditches.

Tabulated reports relating to typhus and rodent control indicate that 70,145 premises were treated, using 59,212 pounds of 10% DDT powder, 14,215 pounds of rodine poison bait, 2,421 pounds of warfarin poison bait placed in bait boxes, 5,593 pounds of hydrocyanic acid gas used in rat harborage, and 13,369 pints of arsenic released.

These figures apply only to the counties in which well organized programs operated. In addition, a large number of municipalities carried on short-term rat poisoning programs, using, in most instances, warfarin bait exposed in protected bait boxes. The City of Mobile also carried on a continuous inspection and rat stoppage program.

The experimental program financed partly by the U. S. Public Health Service in Geneva County continued on the same basis as in the previous year until June 1953, when CDC personnel was withdrawn for budgetary reasons. The county, however, continued the program with slightly reduced personnel for the rest of the year.

Official records continue to indicate a decline in human typhus cases, but some confusion exists in the number of confirmed cases, perhaps due to differences in investigative and laboratory procedures.

The CDC entomologist assigned to this Division continued to render services in connection with insect and rodent control programs. In addition, he continued a study of the mosquito and biting fly situation in the coastal area of Baldwin County. It is felt that the information he col-

lected during 1953 will be of great value in the future.

Consultative services were rendered to various municipalities on garbage handling, collection and disposal. At every opportunity the close relationship between poor garbage practices and the production of flies and rats was stressed. Three cities inaugurated sanitary land fill methods of disposal during the year, and a large number have shown a decided interest in the problem.

#### DRAFTING

A resume' of the work in the Drafting Section for the year 1953 reflects largely the activities of the various bureaus and divisions of the State Health Department. Requests for sketches, charts, maps, plans, posters, etc., were received and completed as promptly as possible. However, because of the shortage in personnel, there were some delays which were unavoidable.

All statistical charts were either brought up to date or remade, as the need indicated. Charts, graphs and maps for the annual report were made, and a good deal of time was spent in work on stencils. The use of illustrative materials has risen, and there have been many calls of this kind which have had to be met with stencils in lieu of a more satisfactory method of reproduction.

An increase was noted in the plans and profiles of installations of sewage disposal systems for schools, National Guard armories, and other community centers. New sanitary survey maps were made as required. All data sent in from surveys throughout the State were transferred to permanent tracings on file in the Health Department, thus bringing up to date the picture of sanitation in a particular town or area.

A considerable amount of work was done for the Water Improvement Commission on charts, forms and reports in the assembling of data on industrial wastes.

With the expanding of the Division of Inspection, some extra time was devoted to milking parlor and dairy barn plans and to the simplification of forms used in reports.

Charts and sketches were made in connection with the onset in Montgomery County of poliomyelitis cases and the subsequent mass inoculation of gamma globulin.

A set of posters was made for lecture purposes for the Bureau of Maternal and Child Health's school nutrition program. As a result of a request from Dr. Todhunter, of the Home Economics Faculty of the University of Alabama, some of these posters are now in use at the University.

There were in all 119 permanent tracings made in the drafting room during the year. More than 250 miscellaneous stencils, posters, placards and forms were also made.

#### VITAL STATISTICS

The year 1953 was one of decreasing birth rates and mortality in Alabama. Deaths attributed to tuberculosis, venereal diseases, childbirth and in-

fancy were fewer than they have been heretofore.

The Bureau of Vital Statistics received more than 174,000 pieces of mail concerning vital statistics. The total volume of services rendered in 1953 was greater than that for any year since 1944. Statutory fees amounting to \$50,845 were collected for record certification services. A total of 79,300 certified copies of vital records was issued, including 5,035 gratuitous copies issued on request of the Veterans Administration. In 55,935 other cases confirmations of record contents were furnished. These services are usually rendered directly to agencies handling applications for Social Security payments, family allotments and welfare payments; also involved were armed forces recruiting, criminal investigations, legal prosecutions, estate settlements, income tax waivers, citizenship matters, applications for drivers' licenses, employment of minors, athletic participation and many other activities. Thousands of record services were performed in connection with the filing of delayed records of birth.

Original vital records totaling 130,736 were filed for the following events: 82,077 live births, 26,758 deaths, 1,956 fetal deaths, and 19,945 marriages. In addition, 9,670 transcripts of divorce decrees and 39,864 reports of premarital physical examinations and blood tests were recorded. New certificates were prepared for 1,064 adoptions and 594 legitimations, and 19,381 delayed certificates of birth were filed.

The Records Division processed 14,004 correction affidavits in 1953. This was a 20 per cent increase over 1952. Queries numbering 3,837 were mailed to physicians, hospitals and other local sources for the purpose of completing and correcting death certificates. Satisfactory replies were received in 3,290 cases. Special queries were made on 569 deaths reported as accident fatalities. Accident information was exchanged with the Department of Public Safety, the National Safety Council, and several local police jurisdictions.

Generally speaking, 1953 was a successful year in vital records registration. However, problems still remain in death registration, particularly infant deaths and those deaths that occur without physicians' attending.

#### VITAL STATISTICS TRENDS

##### *Deaths*

The general rate of mortality decreased from 8.7 per 1,000 population in 1952 to 8.4 in 1953. This provisional rate indicates the lowest general mortality rate in Alabama's vital statistics history. The provisional figures show a numerical decline in the number of deaths (26,758) recorded in 1953. There will be some increase (possibly 125 late registrations) but not enough to change the provisional rate greatly.

##### *Infant Deaths*

A total of 2,782 babies less than one year old died in 1953. The resulting mortality rate of 33.9 per 1,000 live births is more than a seven per cent decrease from the 1952 rate (36.6). The

experience was not so favorable in saving the lives of newborn infants. In 1953 the neonatal mortality rate (23.6 per 1,000 live births) increased slightly from a rate of 23.4 for the previous year, and 749 infants died from birth injuries, asphyxia and infections, at a rate of 9.1 per 1,000 live births. This was about the same experience as that for 1952. Immaturity at birth resulted in 682 deaths in 1953, ranking as the sixth major cause of death. Only four whooping cough deaths were recorded, which is a remarkable drop from previous years, but 133 children died from gastrointestinal disorders.

Maternal Deaths

A further substantial reduction was made in 1953 in maternal mortality. Diseases of pregnancy and childbirth caused 116 deaths at a rate of 13.8 per 10,000 deliveries. This was a new low rate for Alabama but is much higher than the national rate.

Stillbirths

The year saw a further substantial reduction in the ratio of stillbirths to deliveries. More prenatal care and an increased percentage of hospital deliveries produced this favorable report. A total of 1,956 stillbirths (23.3 per 1,000 deliveries) was recorded—nearly two per thousand fewer than were recorded in 1952.

PRINCIPAL CAUSES OF DEATH

The ten leading causes of death in 1953 again accounted for nearly 75 per cent of all deaths. There was a net reduction from the previous year of only 27 in the death toll taken by these major killers. Tuberculosis dropped from sixth place in order of importance in 1950 to ninth place in 1953 to continue a downward trend. Immaturity displaced nephritis as the sixth leading cause of death. Diseases of the arteries came from ninth to eighth place last year. The five leading causes have maintained their relative positions unchanged for several years. There were fewer accident fatalities.

Ten Major Causes of Death

	1953		1952		1947-1951	
	Provisional				(Average)	
	Number	Rate	Number	Rate	Number	Rate
Diseases of heart	8,214	259.1	8,178	261.2	7,261	238.4
Vascular lesions	3,380	106.6	3,327	106.4	2,932	96.3
Malignant neoplasms	3,074	96.9	2,991	95.6	2,732	89.7
Accidents	1,843	58.1	1,933	61.8	1,857	61.0
Pneumonia	941	29.7	944	30.2	1,098	36.0
Immaturity	682	21.5	712	22.8	867	28.5
Nephritis	599	18.9	717	22.9	1,245	40.9
Diseases of arteries	474	14.9	445	14.2	314	10.3
Tuberculosis	467	14.7	569	18.1	930	30.5
Influenza	390	12.3	275	8.8	266	8.7

Rates are per 100,000 population

Communicable Diseases

Influenza maintained its number one rank by a wide margin as a cause of death in the communicable disease category. Syphilis remained in second place but showed a further decline. Meningitis and poliomyelitis ranked third and fourth, respectively, both credited with more

deaths in 1953 than for 1952. Measles caused only four deaths in 1953, compared to 41 in 1952. Whooping cough dropped to four deaths to set a new low record for this disease. The communicable disease death rate in 1953 would have reflected a marked drop if influenza had not taken such a high toll of lives.

Deaths Attributed to Certain Communicable Diseases

	1953		1952		1947-1951	
	Provisional				(Average)	
	Number	Rate	Number	Rate	Number	Rate
Influenza	390	12.3	275	8.8	266	8.7
Syphilis	104	3.3	112	3.6	223	7.3
Meningitis	47	1.5	35	1.1	23	0.8
Poliomyelitis	26	0.8	24	0.8	20	0.7
Diphtheria	8	0.2	21	0.7	28	0.9
Encephalitis	5	0.2	15	0.5	7	0.2
Measles	4	0.1	41	1.3	25	0.8
Whooping cough	4	0.1	22	0.7	59	1.9
Typhoid and paratyphoid	1	*	2	0.1	4	0.1
Malaria	1	*	2	0.1	13	0.4

Rate per 100,000 population

\*Too small to compute

### Births

The birth rate (25.9 per 1,000 population) in 1953 showed a further drop but is still one of the highest in the nation. A further leveling off or decline is to be expected with the return of more favorable world affairs.

### Marriage and Divorce

Marriage registration dropped to a new low of 19,945, while the number of divorces increased to 9,670 in 1953. However, many Alabama couples marry in other states. A Mississippi report shows that more than 10,000 brides giving Alabama as their state of residence married in Mississippi during 1952. There is no reason to think that this number was any less in 1953.

*The Board's report was approved as a whole.*

## REVISION OF THE ROLLS

The next order of business being the revision of the Rolls of the Association, the Secretary was directed by President Morgan to proceed without interruption in the absence of objection. As a preface to the revision of the Roll of County Societies, the Secretary said:

"County Medical Societies, to comply with the Constitution, must meet certain obligations. First, an annual report, on forms furnished by the Association, must be filed with the Secretary; second, each society is expected to be represented at the annual meeting by at least one delegate; and, third, dues are to be remitted for each member not exempt from payment of dues."

With this foreword, the revision proceeded.

### 1. Revision of the Roll of County Societies:

(a) County societies which have fulfilled all their constitutional obligations: Autauga, Baldwin, Bibb, Blount, Calhoun, Chambers, Chilton, Choctaw, Clay, Coffee, Colbert, Covington, Cullman, Dale, Dallas, DeKalb, Elmore, Escambia, Etowah, Franklin, Geneva, Henry, Houston, Jackson, Jefferson, Lauderdale, Lawrence, Lowndes, Macon, Madison, Marion, Marshall, Mobile, Monroe, Montgomery, Morgan, Perry, Pickens, Pike, Randolph, St. Clair, Shelby, Sumter, Talladega, Tallapoosa, Tuscaloosa, Walker, and Wilcox. Total 48.

(b) County societies partially delinquent: In that they are not represented by delegates at this meeting of the Association—Barbour, Bullock, Butler, Cherokee, Clarke, Cleburne, Conecuh, Crenshaw, Fayette, Greene, Lamar, Lee, Limestone, Marengo, Russell, Washington, and Winston. Total 17.

(c) County societies totally delinquent: Coosa and Hale. Total 2.

No objection being made as to the correctness of this report, the President directed the Secretary to write the societies delinquent in report and dues and, failing to re-

move the delinquencies, to call the societies to the attention of the State Board of Censors.

Whereupon the Roll of County Medical Societies was declared closed until the next annual session of the Association.

The Secretary then said:

"In revising the Roll of Counsellors, five lists are prepared, designated respectively: (1) the schedule of counsellors clear on the books; (2) the schedule of delinquent counsellors—counsellors delinquent in attendance or dues, or against whom charges may be pending; (3) the schedule of miscellaneous counsellors—counsellors who have died since the last annual meeting, or have offered their resignation, or have moved out of the state, or out of their respective congressional districts; (4) the schedule of active counsellors of twenty years' standing; and (5) the schedule of counsellors-elect who have qualified as provided in the Constitution."

With such preface, the revision of the rolls was continued.

### 2. Revision of the Roll of Counsellors:

(a) Counsellors clear on the books: Abbott, Acker, Allgood, Barber, Barnes, Baumhauer, Bell, Belue, Boyd, Bragg, Branch, Brown, Brunson, Carraway, Chenault, Cloud, Clyde, Cocke, Collier, Conwell, Crawford, Darby, Daves, Davis, Denison, Dodson, Donald, D. C. and J. M., Finney, Foshee, Gibson, Gill, Gipson, Givhan, Gladney, Godard, Golden, Grote, Guest, Hill, R. C. and R. Lee, Hodges, Hollis, Holloway, Isbell, Jackson, Johnson, Jones, Kennedy, Killingsworth, Leatherwood, Lisenby, Littlejohn, Mazyck, McCown, McNease, Meadows, Moore, Morgan, J. O. and J. Ralph, Neal, Newton, Owings, Parker, L. L. and Robert, Partlow, Riggs, Riser, Roan, Robinson, Samford, Segrest, Sewell, Sherrill, Simpson, Smith, Stabler, Stallworth, Thacker, Timberlake, Treherne, Underwood, Waters, Watson, Weldon, Whiteside, Wilkerson, Wilson, F. C. and W. E., Woodruff.

In the absence of objection, the President ordered passed the names of these Counsellors reported as clear on the books.

(b) Delinquent Counsellors: None.

(c) Miscellaneous Counsellors:

(1) Life Counsellors who have died: Drs. P. J. M. Acker, C. L. Guice, J. S. Mc-Lester, W. D. Partlow, E. S. Sledge, E. M. Thomas, and A. A. Walker.

(2) Active Counsellors who have died: Drs. Duncan Dixon, W. F. Harper, and P. P. Salter.

(3) Active Counsellors who have moved: None.

(4) Active Counsellors who have resigned: None.

(d) Active Counsellors of twenty years' standing: Drs. J. F. Alison, W. R. Carter, M. H. Eskew, W. M. Salter, and G. R. Smith.

(e) Counsellors-elect who have properly qualified: Drs. R. J. Guest, Jr., Gayle T. Johnson, G. E. Newton, L. L. Parker, J. Donald Smith, Alfred J. Treherne, and William E. Wilson.

The President directed that the names of the deceased Counsellors be transferred to the Book of the Dead; that Drs. J. F. Alison, W. R. Carter, M. H. Eskew, W. M. Salter, and G. R. Smith be transferred to the Roll of Life Counsellors; and that to the Roll of Active Counsellors there be added Drs. R. J. Guest, Jr., Gayle T. Johnson, G. E. Newton, L. L. Parker, J. Donald Smith, Alfred J. Treherne, and William E. Wilson.

Whereupon the Roll of Counsellors was declared closed until the next annual session of the Association.

3. *Revision of the Roll of Correspondents:*

Dr. Claude S. Beck, Cleveland, Ohio, who delivered the 1954 Jerome Cochran Lecture, was added to the Roll of Correspondents. The name of Dr. Frank H. Lahey, Boston, deceased, was removed.

4. *Revision of the Roll of Officers:*

Dr. Frank L. Chenault, Decatur, was chosen President-elect, Dr. Hugh Gray, Anniston, Vice-President of the Northeastern Division for a term of four years, and Drs. E. G. Givhan, Jr., Birmingham, and J. D. Perdue, Mobile, members of the State Board of Censors for terms of five years.

Committees constitutionally provided to nominate Counsellors brought in the following nominations, and the nominees were elected by the Association: 2nd District—Drs. D. G. Gill and John W. Davis; 3rd—Drs. E. L. Gibson, A. D. Matthews, James R. Shell, and Thos. B. Woods; 4th—Drs. J. H. Armstrong, Hugh Gray, J. P. Howell, E. G. Moore, Paul Nickerson, and G. G. Woodruff; 5th—Drs. J. O. Finney and A. L. Isbell; 6th—Drs. W. P. Easton and J. P. Collier; 7th—Drs. A. C. Jackson and B. W. McNease; 8th—Drs. John M. Chenault, H. A. Darby, and W. G. McCown; 9th—Dr. W. A. Clyde.

Miscellaneous Business

Expression of Thanks

By a rising vote, the gratitude of the Association was made known to the members of the Mobile County Medical Society for their many courtesies during the meeting; and to the newspapers and radio stations of Mobile for their coverage of the several sessions. The staff of the Admiral Semmes, headquarters hotel, was also thanked for the cheerfulness with which the facilities of the hotel were made available.

Meeting of 1955

On invitation extended by Dr. John Branch of Montgomery, the meeting of 1955

is to be in the Capital City, April 21, 22 and 23.

Installation of Officers

President-elect Joseph M. Donald was installed as President and, in accepting the gavel, presented the retiring President, Dr. J. O. Morgan, his past-president's pin. Dr. Donald then installed his fellow officers, Drs. E. G. Givhan, Jr., and J. D. Perdue as Censors and Dr. Hugh Gray as Vice-President of the Northeastern Division, and declared the meeting adjourned.

THE ROLL OF COUNSELLORS

REVISION OF 1954

LIFE COUNSELLORS

Name and Address	Date of Election
Alison, James F., Selma (4)	1934
Alison, Samuel Beekman, Minter (4)	1919
Anderson, Thos. J., Greensboro (6)	1933
Ashcraft, Virgil Lee, Reform (7)	1919
Bedsole, James G., Jackson (1)	1922
Burdeshaw, Shelby L., Headland (3)	1921
Caldwell, Edwin Valdivia, Huntsville (8)	1918
Cannon, Douglas L., Montgomery (2)	1928
Carter, William R., Repton (2)	1934
Chenault, Frank L., Decatur (8)	1917
Craddock, French H., Sylacauga (4)	1932
Dabney, Marye Y., Birmingham (9)	1923
Eskew, M. H., Uniontown (6)	1934
Garber, James R., Birmingham (9)	1922
Granger, Frank G., Ashford (3)	1928
Gresham, George L., Opp (2)	1913
Gresham, Walter A., Russellville (7)	1933
Harris, Seale, Birmingham (9)	1903
Harrison, William Groce, Birmingham (9)	1895
Hayes, Charles Philips, Elba (3)	1920
Hayes, Julius Pope, Clanton (6)	1920
Heacock, Jos. D., Birmingham (9)	1912
Heflin, Wyatt, Birmingham (9)	1893
Hill, Robert L., Winfield (7)	1924
Howell, William Edward, Haleyville (7)	1918
Howle, James Augustus, Hartselle (8)	1895
Hubbard, T. Brannon, Montgomery (2)	1924
Jackson, Alva A., Florence (8)	1918
Lester, Belford S., Birmingham (9)	1923
Lull, Cabot, Birmingham (9)	1919
Martin, John A., Montgomery (2)	1933
McAdory, Edward Dudley, Cullman (7)	1920
McCall, Daniel T., Mobile (1)	1923
McLeod, John Calvin, Bay Minette (2)	1911
Oswalt, G. G., Mobile (1)	1929
Parker, Lorenzo D., Andalusia (2)	1933
Perdue, James D., Mobile (1)	1933
Ralls, Arthur W., Gadsden (5)	1919
Rucker, Edmon W., Birmingham (9)	1922
Salter, Wilburn M., Anniston (4)	1934
Sankey, Howard J., Birmingham (9)	1914
Scott, Walter F., Birmingham (9)	1922
Searcy, Harvey Brown, Tuscaloosa (6)	1923
Smith, Gordon R., Ozark (3)	1934
Taylor, Woodie R., Town Creek (8)	1926
Thiopen, Charles Alston, Montgomery (2)	1900
Walls, J. J., Alexander City (5)	1924
Wilkinson, David Leonidas, Birmingham (9)	1902
Total 48	

ACTIVE COUNSELLORS

Those marked with a † are serving last terms of six years.

Those marked with an asterisk (\*) are serving second terms of seven years.

Those without a symbol are serving first terms of seven years.

The numeral is the number of the congressional district.

	Date of Elec- Explan tion ratlon
Abbott, Chas. E., Tuscaloosa (6).....	†1952 to 1958
Acker, Charles T., Montevallo (6).....	†1951 to 1957
Allgood, Homer W., Fairfield (9).....	*1951 to 1958
Barber, William J., Butler (1).....	*1949 to 1956
Barnes, J. Mac Ilwaine, Montgomery (2).....	1949 to 1956
Baumhauer, Jacques H., Mobile (1).....	1949 to 1956
Bell, J. Mac, Mobile (1).....	*1950 to 1957
Belue, Julius O., Athens (8).....	†1951 to 1957
Boyd, Frank H., Opelika (3).....	†1953 to 1959
Bragg, John C., Decatur (8).....	*1948 to 1955
Branch, John L., Montgomery (2).....	*1951 to 1958
Brown, Elridge T., Cleveland (7).....	†1951 to 1957
Brunson, Emmett T., Samson (3).....	†1950 to 1956
Carraway, Chas. Newton, Birmingham (9).....	*1949 to 1956
Chenault, Erskine M., Decatur (8).....	†1949 to 1955
Cloud, Robert E., Ensley (9).....	*1948 to 1955
Clyde, Wallace A., Birmingham (9).....	*1954 to 1961
Cocke, William T., Demopolis (1).....	†1953 to 1959
Collier, James P., Tuscaloosa (6).....	†1954 to 1960
Conwell, H. Earle, Birmingham (9).....	*1949 to 1956
Crawford, Jas. M., Arab (5).....	1950 to 1957
Darby, Henry A., Athens (8).....	*1954 to 1961
Daves, James G., Cullman (7).....	†1952 to 1958
Davis, Lewis C., Gordo (7).....	†1953 to 1959
Denison, George A., Birmingham (9).....	*1950 to 1957
Dodson, Robert B., Cullman (7).....	*1951 to 1958
Donald, Dan C., Birmingham (9).....	*1951 to 1958
Donald, Joseph M., Birmingham (9).....	*1953 to 1960
Finney, James O., Gadsden (5).....	*1954 to 1961
Foshee, Reuben A., Alexander City, Rt. 4 (5).....	*1951 to 1958
Gibson, Edward Lee, Enterprise (3).....	†1954 to 1960
Gill, Daniel G., Montgomery (2).....	*1954 to 1961
Gipson, Amos C., Gadsden (5).....	*1951 to 1958
Givhan, Edgar G., Jr., Birmingham (9).....	*1953 to 1960
Gladney, James C., Jasper (7).....	1949 to 1956
Godard, Claud G., Fairhope (2).....	*1949 to 1956
Golden, William C., Clanton (6).....	*1951 to 1958
Grote, Carl A., Huntsville (8).....	†1951 to 1957
Guest, Reuben J., Jr., Ft. Payne (5).....	1953 to 1960
Hill, Robert C., York (6).....	†1950 to 1956
Hill, R. Lee, Haleyville (7).....	†1953 to 1959
Hodges, Rayford, Scottsboro (8).....	†1949 to 1955
Hollis, Murray C., Winfield (7).....	1951 to 1958
Holloway, H. Sellers, Notasulga (3).....	1951 to 1958
Isbell, Arthur L., Albertville (5).....	†1954 to 1960
Jackson, Albert C., Jasper (7).....	†1954 to 1960
Johnson, Gayle T., Mobile (1).....	1953 to 1960
Jones, J. Paul, Camden (1).....	*1950 to 1957
Kennedy, Hughes, Jr., Birmingham (9).....	*1950 to 1957
Killingsworth, Noah W., Brundidge (2).....	†1953 to 1959
Leatherwood, Elbert F., Hayneville (2).....	*1951 to 1958
Lisenby, J. Otis, Atmore (2).....	*1950 to 1957
Littlejohn, Wilmot S., Birmingham (9).....	1948 to 1955
Mazyck, Arthur, Dothan (3).....	1948 to 1955
McCown, William G., Huntsville (8).....	*1954 to 1961
McNease, Benjamin W., Fayette (7).....	*1954 to 1961
Meadows, James A., Birmingham (9).....	*1950 to 1957
Moore, C. W. C., Talladega (4).....	†1951 to 1957
Morgan, J. Orville, Gadsden (5).....	†1953 to 1959
Morgan, J. Ralph, Birmingham (9).....	*1950 to 1957

Neal, Ralph D., Grove Hill (1).....	1948 to 1955
Newton, George E., Prattville (4).....	1953 to 1960
Owings, W. J. B., Brent (6).....	*1948 to 1955
Parker, Leslie L., Andalusia (2).....	1953 to 1960
Parker, Robert, Montgomery (2).....	1948 to 1955
Partlow, Rufus C., Tuscaloosa (6).....	*1950 to 1957
Riggs, Frank W., Montgomery (2).....	*1950 to 1957
Rlser, Willam H., Lafayette (5).....	†1949 to 1955
Roan, Avery M., Decatur (8).....	*1948 to 1955
Robinson, E. Bryce, Fairfield (9).....	1948 to 1955
Samford, Millard W., Opelika (3).....	*1953 to 1960
Segrest, Grady O., Mobile (1).....	*1949 to 1956
Sherrill, John D., Birmingham (9).....	†1953 to 1959
Slimpson, John W., Birmingham (9).....	*1949 to 1956
Smith, J. Donald, Eutaw (6).....	1953 to 1960
Stabler, Lorenzo V., Greenville (2).....	†1951 to 1957
Stallworth, William A., Frisco City (1).....	†1951 to 1957
Thacker, Vincent J., Dothan (3).....	†1949 to 1955
Timberlake, Landon, Birmingham (9).....	1952 to 1959
Terheer, Alfred J., Atmore (2).....	1953 to 1960
Underwood, S. Sellers, Birmingham (9).....	1949 to 1956
Waters, Hinton W., Opp (2).....	†1953 to 1959
Watson, Jerre, Anniston (4).....	†1952 to 1958
Weldon, Joseph M., Mobile (1).....	†1949 to 1955
Whiteside, Maurice S., Cullman (7).....	*1948 to 1955
Wilkerson, Arthur F., Marion (6).....	1950 to 1957
Willson, Frank C., Birmingham (9).....	*1949 to 1956
Wilson, William E., Russellville (7).....	1953 to 1960
Woodruff, Gerald G., Anniston (4).....	†1954 to 1960

Total 89

COUNSELLORS-ELECT

Armstrong, James H., Selma (4).....	1954 to 1961
Baston, William P., Moundville (6).....	1954 to 1961
Chenault, John M., Decatur (8).....	1954 to 1961
Davis, John W., Jr., Montgomery (2).....	1954 to 1961
Gray, Hugh E., Anniston (4).....	1954 to 1961
Howell, Julian P., Selma (4).....	1954 to 1961
Matthews, Augustus D., Ozark (3).....	1954 to 1961
Moore, Ernest G., Tallassee (4).....	1954 to 1961
Nickerson, Paul, Sylacauga (4).....	1954 to 1961
Shell, James R., Abbeville (3).....	1954 to 1961
Woods, Thomas B., Dothan (3).....	1954 to 1961

Total 11

THE ROLL OF THE COLLEGE OF COUNSELLORS BY CONGRESSIONAL DISTRICTS

On this roll the names of the Counsellors are given by Congressional Districts. It is intended to serve as a guide in the election of new Counsellors, with a view to the distribution of them in approximate proportion to the number of members in the several districts. It is not considered to be good policy, and it is not considered to be fair and right, to give a few large towns greatly more than their pro rata share of Counsellors. The calculations are based on the nearest whole number. On April 1, 1954, there were 1914 members in the County Medical Societies. That would give one Counsellor to every 19 members. The membership set forth in the following is that of April 1.

FIRST DISTRICT

*Names of Counsellors*—W. T. Cocke, Marengo; W. J. Barber, Choctaw; R. D. Neal, Clarke; J. H. Baumhauer, G. O. Segrest, J. M. Weldon, Gayle T. Johnson and J. Mac Bell, Mobile; W. A. Stallworth, Monroe; J. Paul Jones, Wilcox.

County	Members	Counsellors
Choctaw	6	1
Clarke	11	1
Marengo	12	1
Mobile	191	5
Monroe	8	1
Washington	3	0
Wilcox	7	1
	238	10

SECOND DISTRICT

*Names of Counsellors*—C. G. Godard, Baldwin; L. V. Stabler, Butler; L. L. Parker and H. W. Waters, Covington; J. O. Lisenby and A. J. Treherne, Escambia; E. F. Leatherwood, Lowndes; J. L. Branch, F. W. Riggs, J. M. Barnes, Robert Parker, D. G. Gill, J. W. Davis, Jr., Montgomery; N. W. Killingsworth, Pike.

County	Members	Counsellors
Baldwin	23	1
Butler	10	1
Conecuh	8	0
Covington	24	2
Crenshaw	7	0
Escambia	16	2
Lowndes	4	1
Montgomery	137	6
Pike	15	1
	244	14

THIRD DISTRICT

*Names of Counsellors*—E. L. Gibson, Coffee; A. D. Matthews, Dale; E. T. Brunson, Geneva; J. R. Shell, Henry; V. J. Thacker, Arthur Mazyck, and T. B. Woods, Houston; F. H. Boyd and M. W. Samford, Lee; H. S. Holloway, Macon.

County	Members	Counsellors
Barbour	11	0
Bullock	5	0
Coffee	11	1
Dale	10	1
Geneva	13	1
Henry	7	1
Houston	33	3
Lee	23	2
Macon	8	1
Russell	5	0
	126	10

FOURTH DISTRICT

*Names of Counsellors*—G. E. Newton, Autauga; Hugh E. Gray, Jerre Watson and G. G. Woodruff, Calhoun; J. H. Armstrong and J. P. Howell, Dallas; E. G. Moore, Elmore; C. W. C. Moore and Paul Nickerson, Talladega.

County	Members	Counsellors
Autauga	5	1
Calhoun	46	3
Clay	7	0
Coosa	3	0
Dallas	37	2
Elmore	12	1

St. Clair	9	0
Talladega	27	2
	146	9

FIFTH DISTRICT

*Names of Counsellors*—W. H. Riser, Chambers; R. J. Guest, Jr., DeKalb; A. C. Gipson, J. O. Finney and J. O. Morgan, Etowah; A. L. Isbell and J. M. Crawford, Marshall; R. A. Foshee, Tallapoosa.

County	Members	Counsellors
Chambers	16	1
Cherokee	2	0
Cleburne	3	0
DeKalb	12	1
Etowah	67	3
Marshall	23	2
Randolph	8	0
Tallapoosa	20	1
	151	8

SIXTH DISTRICT

*Names of Counsellors*—W. J. B. Owings, Bibb; W. C. Golden, Chilton; J. Donald Smith, Greene; W. P. Baston, Hale; A. F. Wilkerson, Perry; C. T. Acker, Shelby; R. C. Hill, Sumter; J. P. Collier, R. C. Partlow and C. E. Abbott, Tuscaloosa.

County	Members	Counsellors
Bibb	5	1
Chilton	9	1
Greene	5	1
Hale	6	1
Perry	9	1
Shelby	15	1
Sumter	14	1
Tuscaloosa	71	3
	134	10

SEVENTH DISTRICT

*Names of Counsellors*—E. T. Brown, Blount; R. B. Dodson, J. G. Daves and M. S. Whiteside, Cullman; B. W. McNease, Fayette; W. E. Wilson, Franklin; M. C. Hollis, Marion; L. C. Davis, Pickens; A. C. Jackson and J. C. Gladney, Walker; R. Lee Hill, Winston.

County	Members	Counsellors
Blount	11	1
Cullman	21	3
Fayette	7	1
Franklin	13	1
Lamar	9	0
Marion	13	1
Pickens	12	1
Walker	29	2
Winston	10	1
	125	11

EIGHTH DISTRICT

*Names of Counsellors*—Rayford Hodges, Jackson; H. A. Darby and J. O. Belue, Limestone; W. G. McCown and C. A. Grote, Madison; E. M. Chenault, J. C. Bragg, A. M. Roan, and J. M. Chenault, Morgan.

County	Members	Counsellors
Colbert .....	21	0
Jackson .....	8	1
Lauderdale .....	41	0
Lawrence .....	9	0
Limestone .....	11	2
Madison .....	41	2
Morgan .....	34	4
	165	9

NINTH DISTRICT

*Names of Counsellors*—J. D. Sherrill, R. E. Cloud, C. N. Carraway, H. Earle Conwell, J. W. Simpson, F. C. Wilson, G. A. Denison, Hughes Kennedy, Jr., J. A. Meadows, Ralph Morgan, D. C. Donald, Joe M. Donald, E. G. Givhan, Jr., H. W. Allgood, W. A. Clyde, E. Bryce Robinson, W. S. Littlejohn, S. S. Underwood, and Landon Timberlake.

County	Members	Counsellors
Jefferson .....	586	19

THE ROLL OF CORRESPONDENTS

"Distinguished members of the medical profession residing outside of the State, and Counsellors of the Association, who after not less than ten years of faithful service may have resigned their counsellorships, shall be eligible for election as Correspondents.

"Correspondents shall have the privilege of transmitting or presenting to the Association such communications, or scientific essays, as they may deem proper."—*From the Constitution.*

Name and Address	Date of Election
Andrew J. Coley, Oklahoma City.....	1909
Rudolph Matas, New Orleans .....	1921
Henry A. Christian, Boston .....	1921
H. A. Royster, Raleigh, N. C. ....	1926
G. Canby Robinson, Baltimore .....	1928
Russell L. Cecil, New York .....	1934
T. M. McMillan, Philadelphia .....	1938
George T. Pack, New York .....	1939
E. V. McCollum, Baltimore.....	1940
Harvey B. Stone, Baltimore.....	1942
Albert C. Furstenberg, Ann Arbor ..	1943
Alton Ochsner, New Orleans .....	1946
Reginald Fitz, Boston .....	1947
Andrew C. Ivy, Chicago .....	1948
Max Thorek, Chicago .....	1949
Paul D. White, Boston .....	1950
Emil Novak, Baltimore .....	1951
Richard Cattell, Boston .....	1952
Claude S. Beck, Cleveland .....	1954

SCHEDULE OF THE ANNUAL SESSIONS  
AND PRESIDENTS SINCE THE RE-  
ORGANIZATION IN 1868

Place and President	Year
Selma—Albert Galatin Mabry.....	1868
Mobile—Albert Galatin Mabry .....	1869
Montgomery—Richard Frazer Michel ..	1870
Mobile—Francis Armstrong Ross.....	1871
Huntsville—Thomas Childress Osborne.	1872
Tuscaloosa—George Ernest Kumpe .....	1873

Selma—George Augustus Ketchum .....	1874
Montgomery—Job Sobieski Weatherly ..	1875
Mobile—John Jefferson Dement .....	1876
Birmingham—Edward Davies McDaniel ..	1877
Eufaula—Peter Bryce .....	1878
Selma—Robert Dickens Webb .....	1879
Huntsville—Edmond Pendleton Gaines ..	1880
Montgomery—William Henry Anderson ..	1881
Mobile—John Brown Gaston .....	1882
Birmingham—Clifford Daniel Parke .....	1883
Selma—Mortimer Harvey Jordan .....	1884
Greenville—Benjamin Hogan Riggs .....	1885
Anniston—Francis Marion Peterson .....	1886
Tuscaloosa—Samuel Dibble Seelye .....	1887
Montgomery—Edward Henry Sholl .....	1888
Mobile—Milton Columbus Baldridge .....	1889
Birmingham—Charles Higgs Franklin ..	1890
Huntsville—William Henry Sanders .....	1891
Montgomery—Benjamin James Baldwin ..	1892
Selma—James Thomas Searcy .....	1893
Birmingham—Thaddeus Lindley Robertson	1894
Mobile—Richard Matthew Fletcher .....	1895
Montgomery—William Henry Johnston ..	1896
Selma—Barckley Wallace Toole .....	1897
Birmingham—Luther Leonidas Hill .....	1898
Mobile—Henry Altamont Moody .....	1899
Montgomery—John Clarke LeGrande .....	1900
Selma—Russell McWhorter Cunningham ..	1901
Birmingham—Edwin Lesley Marechal ..	1902
Talladega—Glenn Andrews .....	1903
Mobile—Matthew Bunyan Cameron .....	1904
Montgomery—Capers Capehart Jones .....	1905
Birmingham—Eugene DuBose Bondurant ..	1906
Mobile—George Tighlman McWhorter .....	1907
Montgomery—Samuel Wallace Welch .....	1908
Birmingham—Benjamin Leon Wyman .....	1909
Mobile—Wooten Moore Wilkerson .....	1910
Montgomery—Wyatt Heflin Blake .....	1911
Birmingham—Lewis Coleman Morris .....	1912
Mobile—Harry Tutwiler Inge .....	1913
Montgomery—Robert S. Hill .....	1914
Birmingham—Benjamin Britt Simms .....	1915
Mobile—James Norment Baker .....	1916
Montgomery—Henry Green .....	1917
Birmingham—William Dempsey Partlow ..	1918
Mobile—Isaac LaFayette Watkins .....	1919
Anniston—James Somerville McLester ..	1920
Montgomery—Louis William Johnston ..	1921
Birmingham—Dyer F. Talley .....	1922
Mobile—Walter S. Britt .....	1923
Montgomery—W. W. Harper .....	1924
Birmingham—J. D. Heacock .....	1925
Mobile—C. A. Mohr .....	1926
Montgomery—A. L. Harlan .....	1927
Birmingham—John D. S. Davis .....	1928
Mobile—E. V. Caldwell .....	1929
Montgomery—L. E. Broughton .....	1930
Birmingham—W. G. Harrison .....	1931
Mobile—Toulmin Gaines .....	1932
Montgomery—Samuel Kirkpatrick .....	1933
Birmingham—James R. Garber .....	1934
Mobile—William M. Cunningham .....	1935
Montgomery—Charles A. Thigpen .....	1936
Birmingham—Lloyd Noland .....	1937
Mobile—E. S. Sledge .....	1938
Montgomery—Seale Harris, Sr. ....	1939
Birmingham—M. S. Davie .....	1940
Mobile—Samuel A. Gordon .....	1941
Montgomery—James M. Mason .....	1942
Birmingham—Harvey B. Searcy .....	1943

Montgomery—Fred W. Wilkerson .....	1944
Meeting Cancelled—Walter F. Scott .....	1945
Birmingham—Walter F. Scott .....	1946
Birmingham—Carl A. Grote .....	1947
Mobile—Jesse P. Chapman .....	1948
Montgomery—J. Paul Jones .....	1949
Birmingham—Frank C. Wilson .....	1950
Mobile—Joseph M. Weldon .....	1951
Montgomery—T. Brannon Hubbard .....	1952
Birmingham—B. W. McNease .....	1953
Mobile—J. Orville Morgan .....	1954

#### SECRETARIES OF THE ASSOCIATION

1852-1854 .....	George A. Ketchum
1854-1855 .....	R. Miller
1869-1873 .....	Jerome Cochran
1874-1876 .....	B. H. Riggs
1879-1892 .....	T. A. Means
1893-1897 .....	J. R. Jordan
1897-1904 .....	G. P. Waller
1904-1906 .....	L. C. Morris
1906-1915 .....	J. N. Baker
1915-1923 .....	H. G. Perry
1923-1924 .....	Douglas L. Cannon
1924-1930 .....	B. B. Simms
1930-1940 .....	Douglas L. Cannon

#### TREASURERS OF THE ASSOCIATION

1854-1855 .....	W. P. Reese
1869-1898 .....	W. C. Jackson
1898-1915 .....	H. G. Perry
1915-1939 .....	J. U. Ray

#### SECRETARY-TREASURERS OF THE ASSOCIATION

1940- .....	Douglas L. Cannon
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#### SCHEDULE OF JEROME COCHRAN LECTURERS

- 1899—J. T. Searcy, Tuscaloosa—What Is Insanity?
- 1900—Wm. Osler, Baltimore—Not present.
- 1901—Wm. Osler, Baltimore—Not present.
- 1902—Nathan Bozeman, New York—Declined.
- 1903—George H. Price, Nashville—The History of Medicine.
- 1904—W. S. Thayer, Baltimore—Cardiac and Vascular Complications of Typhoid Fever.
- 1905—Robert Abbe, New York—The Problems of Surgery.
- 1906—Joseph Collins, New York—Arteriosclerosis.
- 1907—Nicholas Senn, Chicago—Final Triumph of Scientific Medicine.
- 1908—E. L. Marechal, Mobile—Absent.
- 1909—Lewellys F. Barker, Baltimore—Clinical Methods of Cardiac Investigation.
- 1910—Frank S. Meara, New York—Some Problems of Nutrition in Early Life.
- 1911—Rudolph Matas, New Orleans—Inflammatory Tuberculosis.
- 1912—Maurice H. Richardson, Boston—Elimination of Preventable Disasters from Surgery.
- 1913—L. L. Hill, Montgomery—Surgical Complications and Sequelae of Typhoid Fever.

1914—Frank Smithies, Chicago—Contributions of the Twentieth Century to the Better Understanding of Gastric Cancer.

1915—John B. Elliott, Jr., New Orleans—Abscess of Liver.

1916—Howard A. Kelly, Baltimore—Radium Therapy.

1917—Wm. J. Mayo, Rochester—Importance of Septic Infection in the Three Great Plagues.

1918—George E. Bushnell, Washington—The Army in Relation to the Tuberculosis Problem.

1919—George W. Crile, Cleveland, Ohio—Abdominal Surgery in Civil and Military Hospitals.

1920—Henry A. Christian, Boston—Bright's Disease With Special Reference to Its Treatment.

1921—J. Whitridge Williams, Baltimore—A Critical Review of Twenty-One Years' Experience with Caesarean Section.

1922—Chas. H. Mayo, Rochester, Minn.—The Thyroid and Its Diseases.

1923—Jas. S. McLester, Birmingham—Nutrition in Its Newer Aspects.

1924—James S. Stone, Boston—Abdominal Diagnoses in Children.

1925—H. A. Royster, Raleigh—The Surgeon's Heritage and Outlook.

1926—Stewart Roberts, Atlanta—The Heart Muscle.

1927—G. Canby Robinson, Baltimore—The Mechanism of Heart Failure and Its Correction.

1928—John B. Deaver, Philadelphia—Chronic Pancreatitis.

1929—Louis B. Wilson, Rochester, Minn.—Some Suggestions for Improved Training of Medical Specialists.

1930—Walter E. Sistrunk, Dallas, Texas—The Part That Surgical Anesthesia Has Played in Medical Science.

1931—R. S. Cunningham, Nashville, Tenn.—Studies on the Pathology of Tuberculosis and Syphilis.

1932—A. Benson Cannon, New York—Practical Points on the Diagnosis and Treatment of the so-called Lymphoblastoma Group of Diseases.

1933—J. Shelton Horsley, Richmond—Cancer of the Stomach and Colon.

1934—Russell L. Cecil, New York—Present Trends in the Study of Rheumatic Fever and Rheumatoid Arthritis.

1935—George H. Semken, New York—A Consideration of Tumors of the Breast.

1936—William D. Partlow, Tuscaloosa—A Debt the World Owes Medical Science.

1937—Frank H. Lahey, Boston—Carcinoma of the Colon and Rectum.

1938—T. M. McMillan, Philadelphia—An Optimistic View of Some of the Problems of Heart Disease.

1939—George T. Pack, New York—Recent Advances in the Radiation Therapy of Cancer.

1940—E. V. McCollum, Baltimore—Some Contributions of Nutritional Research to Clinical Medicine.

1941—M. Y. Dabney, Birmingham—The Story of Breast Cancer.

1942—Harvey B. Stone, Baltimore—Biliary Diseases as Seen by a Surgeon.

1943—A. C. Furstenberg, Ann Arbor—Objectives in Medical Education.

1944—Tinsley R. Harrison, Dallas, Texas—The Value and Limitations of Laboratory Tests in the Practice of Medicine.

1945—Meeting Cancelled.

1946—Alton Ochsner, New Orleans -The Influence of Serendipity on Medicine.

1947—Reginald Fitz, Boston—The Early Characteristics of Certain Chronic Diseases.

1948—Andrew C. Ivy, Chicago—The Gallbladder in Health and Disease.

1949—Max Thorek, Chicago—Cholecystectomy: Its Technical Variations.

1950—Paul D. White, Boston—Historical Delays in the Application of Knowledge About the Heart.

1951—Emil Novak, Baltimore—The Relation of Hormones to Female Genital Tumors.

1952—Richard Cattell, Boston—Carcinoma of the Colon and Rectum.

1953—Champ Lyons, Birmingham—Metabolic Aspects of Convalescence.

1954—Claude S. Beck, Cleveland—Operations for Coronary Disease.

OFFICERS OF THE ASSOCIATION

PRESIDENT

Joseph M. Donald (1955) Birmingham

PRESIDENT-ELECT

Frank L. Chenault (1956) Decatur

VICE-PRESIDENTS

S. W. Windham (1955) Dothan

T. J. Payne, Jr. (1956) Jasper

W. R. Carter (1957) Repton

Hugh Gray (1958) Anniston

SECRETARY-TREASURER

Douglas L. Cannon (1955) Montgomery

THE STATE BOARD OF CENSORS

E. V. Caldwell, Chm. (1955) Huntsville

J. G. Daves (1955) Cullman

John W. Simpson (1956) Birmingham

J. Paul Jones (1956) Camden

Robert Parker (1957) Montgomery

C. E. Abbott (1957) Tuscaloosa

John L. Branch (1958) Montgomery

J. O. Finney (1958) Gadsden

E. G. Givhan, Jr. (1959) Birmingham

J. D. Perdue (1959) Mobile

STATE HEALTH OFFICER

D. G. Gill (1957) Montgomery

DELEGATES AND ALTERNATES TO THE AMERICAN MEDICAL ASSOCIATION

Delegate—C. A. Grote Huntsville

Alternate—E. B. Robinson Fairfield

(Term: January 1, 1953-December 31, 1954)

Delegate—J. Paul Jones Camden

Alternate—D. G. Gill Montgomery

(Term: January 1, 1954-December 31, 1955)

Delegate—E. Bryce Robinson Fairfield

Alternate—B. W. McNease Fayette

(Term: January 1, 1955-December 31, 1956)

STANDING COMMITTEES

COMMITTEE ON MEDICAL SERVICE AND PUBLIC RELATIONS

J. O. Finney, Chairman, Gadsden	1956
E. L. Gibson, Enterprise	1955
Joe H. Little, Mobile	1955
Francis M. Thigpen, Montgomery	1956
H. L. Holley, Birmingham	1957
H. G. Hodo, Jr., Fayette	1957
J. G. Daves, Cullman	1958
A. C. Gipson, Gadsden	1958
J. Paul Jones, Camden	1959
Julius Michaelson, Foley	1959
J. M. Donald, Birmingham	ex officio
Douglas L. Cannon, Montgomery	ex officio
D. G. Gill, Montgomery	ex officio
Mrs. John M. Chenault, Decatur	ex officio

COMMITTEE ON MENTAL HYGIENE

Jack Jarvis, Chairman, Birmingham	1955
Frank A. Kay, Birmingham	1956
J. S. Tarwater, Tuscaloosa	1957

COMMITTEE ON MATERNAL AND CHILD HEALTH

Hughes Kennedy, Jr., Chm., Birmingham	1955
T. C. King, Anniston	1956
Buford Word, Birmingham	1957

COMMITTEE ON CANCER CONTROL

John Day Peake, Chairman, Mobile	1955
W. N. Jones, Birmingham	1956
J. P. Chapman, Selma	1957
A. E. Casey, Birmingham	1958
T. B. Hubbard, Jr., Montgomery	1959

COMMITTEE ON PREVENTION OF BLINDNESS AND DEAFNESS

Karl Benkwith, Chairman, Montgomery	1956
Geo. E. Johnson, Dothan	1955
Gayle T. Johnson, Mobile	1957

COMMITTEE ON POSTGRADUATE STUDY

J. R. Garber, Chairman, Birmingham	1957
A. S. Dix, Mobile	1955
A. J. Treherne, Atmore	1956

COMMITTEE ON PHYSICIAN-DRUGGIST RELATIONSHIPS

W. M. Salter, Chairman, Anniston	1955
B. Frank Jackson, Jr., Montgomery	1956
A. J. Treherne, Atmore	1957

COMMITTEE ON ANESTHESIOLOGY

Alfred Habeeb, Chm., Fairfield	1956
Alice McNeal, Birmingham	1955
W. P. May, Montgomery	1957

COMMITTEE ON TUBERCULOSIS

Paul W. Auston, Chairman, Shawmut	1955
W. J. Tally, Gadsden	1956
A. J. Viehman, Birmingham	1957

COMMITTEE ON INDUSTRIAL MEDICINE

D. O. Wright, Chairman, Birmingham	1955
W. G. Thuss, Birmingham	1956
E. A. Isbell, Gadsden	1957

## LIAISON, UMWA MEDICAL CARE PROGRAM

E. Bryce Robinson, Chm., Fairfield	1960
T. J. Payne, Jasper	1959
H. E. Simon, Birmingham	1958
L. H. Hubbard, Montevallo	1957
A. C. Jackson, Jasper	1956
J. E. Wood, Haleyville	1955

SPECIAL COMMITTEES  
COMMITTEE ON INSURANCE

J. O. Morgan, Chairman, Gadsden	1957
B. M. Carraway, Birmingham	1956
Victor T. Hudson, Mobile	1955

## COMMITTEE ON THE CORONER SYSTEM

J. A. Cunningham, Chm., Birmingham	1957
Brooks Bishop, Vice-Chm., Birmingham	1957
I. M. Wise, Mobile	1956
J. S. P. Beck, Tuscaloosa	1955

## AMERICAN MEDICAL EDUCATION FOUNDATION

H. G. Hodo, Jr., Chairman, Fayette	1957
E. L. Gibson, Enterprise	1956
Julius Michaelson, Foley	1955

## REGISTRATION AT THE EIGHTY-SIXTH ANNUAL

## SESSION, MOBILE, APRIL 15-17, 1954

## LIFE COUNSELLORS

Alison, S. B., Minter  
Anderson, T. J., Greensboro  
Bedsole, J. G., Jackson  
Burdeshaw, S. L., Headland  
Caldwell, E. V., Huntsville

Cannon, D. L., Montgomery  
Chenault, F. L., Decatur  
Gresham, G. L., Opp  
Hill, R. L., Winfield  
Hubbard, T. B., Montgomery

Martin, J. A., Montgomery  
Oswalt, G. G., Mobile  
Parker, L. D., Andalusia  
Perdue, J. D., Mobile  
Rucker, E. W., Jr., Birmingham

## ACTIVE COUNSELLORS

Acker, C. T., Montevallo  
Alison, J. F., Selma  
Allgood, H. W., Fairfield  
Barber, W. J., Butler  
Barnes, J. M., Montgomery  
Baumbauer, J. H., Mobile  
Bell, J. M., Mobile  
Bragg, J. C., Decatur  
Branch, J. L., Montgomery  
Brown, E. T., Cleveland  
Brunson, E. T., Samson  
Carraway, C. N., Birmingham  
Carter, W. R., Repton  
Cocke, W. T., Demopolis  
Collier, J. P., Tuscaloosa  
Crawford, J. M., Arab  
Daves, J. G., Cullman  
Donald, J. M., Birmingham  
Eskew, M. H., Uniontown  
Finney, J. O., Gadsden  
Gibson, E. L., Enterprise

Gill, D. G., Montgomery  
Gipson, A. C., Gadsden  
Givhan, E. G., Birmingham  
Godard, C. G., Fairhope  
Grote, C. A., Huntsville  
Guest, R. J., Jr., Ft. Payne  
Hill, R. C., York  
Hodges, Rayford, Scottsboro  
Hollis, M. C., Winfield  
Isbell, A. L., Albertville  
Jackson, A. C., Jasper  
Johnson, G. T., Mobile  
Leatherwood, E. F., Hayneville  
Lisenby, J. O., Atmore  
Littlejohn, W. S., Birmingham  
McNease, B. W., Fayette  
Morgan, J. O., Gadsden  
Morgan, J. R., Birmingham  
Neal, R. D., Grove Hill  
Owings, W. J. B., Brent  
Parker, L. L., Andalusia

Parker, Robert, Montgomery  
Partlow, R. C., Tuscaloosa  
Riggs, F. W., Montgomery  
Roan, A. M., Decatur  
Robinson, E. B., Jr., Fairfield  
Salter, W. M., Anniston  
Segrest, G. O., Mobile  
Sewell, J. F., Wetumpka  
Simpson, J. W., Birmingham  
Smith, G. R., Ozark  
Smith, J. D., Eutaw  
Stallworth, W. A., Frisco City  
Timberlake, Landon, Birmingham  
Treherne, A. J., Atmore  
Underwood, S. S., Birmingham  
Watson, Jerre, Anniston  
Weldon, J. M., Mobile  
Wilkerson, A. F., Marion  
Wilson, W. E., Russellville  
Woodruff, G. G., Anniston

## DELEGATES

Autauga: W. H. Till, Prattville  
Baldwin: R. H. Johnson, Fairhope  
Bibb: A. C. Pratt, Jr., Centerville  
Blount: J. E. Bell, Trafford  
Calhoun: H. E. Gray, Anniston;  
James Williams, Jr., Jacksonville  
Chambers: P. W. Auston, Shawmut;  
W. L. Cowles, Lanett  
Chilton: C. O. Lawrence, Clanton  
Choctaw: F. H. DeVane, Silas  
Clay: J. E. Foster, Lineville  
Coffee: L. M. Johnson, Elba; A. C. Touchy, Enterprise  
Colbert: W. H. Blake, Jr., Sheffield;  
W. R. Trapp, Tuscumbia

Covington: W. G. Cumbie, Andalusia;  
J. C. Hurst, Opp  
Cullman: L. H. Clemmons, Cullman;  
G. T. Rowe, Hanceville  
Dale: L. D. McLaughlin, Ozark;  
B. D. Petrey, Ozark  
Dallas: S. O. Moseley, Jr., Selma;  
J. T. Moore, Jr., Orrville;  
S. M. Kirkpatrick, Selma  
DeKalb: R. A. Igou, Ft. Payne;  
C. D. Killian, Ft. Payne  
Elmore: W. A. Edwards, Wetumpka;  
E. G. Moore, Tallahassee  
Escambia: F. M. Phillippi, Brewton  
Etowah: C. L. Lawson, Gadsden

Franklin: Price Clayton, Russellville  
Geneva: R. L. Martin, Jr., Geneva  
Henry: J. R. Shell, Abbeville  
Houston: G. H. Stokes, Dothan;  
T. B. Woods, Jr., Dothan  
Jackson: I. W. Bankston, Scottsboro;  
M. H. Lynch, Scottsboro  
Jefferson: B. M. Carraway, Birmingham;  
W. E. Coleman, Birmingham;  
C. J. Donald, Jr., Birmingham;  
E. B. Glenn, Birmingham;  
J. B. McLester, Birmingham;  
D. B. Sweeney, Birmingham;  
C. L. Yelton, Fairfield  
Lauderdale: M. C. Dunn, Florence;  
W. C. Simpson, Florence

Lawrence: C. G. Farish, Moulton  
Lowndes: J. A. Sherrod, Jr., Hayneville  
Macon: P. M. Lightfoot, Jr., Tuskegee  
Madison: O. F. Gay, Huntsville; F. W. Smith, Huntsville  
Marion: R. H. Mason, Hamilton  
Marshall: L. F. Corley, Boaz; M. T. Hunt, Boaz  
Mobile: N. R. Clarke, Jr., Mobile; W. G. Fonde, Mobile; J. H. Little, Mobile  
Monroe: R. A. Smith, Jr., Monroeville  
Montgomery: J. W. Davis, Jr., Montgomery; J. H. French, Montgomery; W. L. Smith, Montgomery; C. A. Willis, Montgomery  
Morgan: Arthur Calix, Decatur; J. M. Chenault, Decatur  
Perry: W. H. DeRamus, Marion  
Pickens: R. K. Wilson, Aliceville  
Pike: C. K. Beck, Troy; T. D. Cowles, Troy  
Randolph: G. W. Bonner, Roanoke  
St. Clair: M. G. Norrell, Jr., Pell City  
Shelby: W. C. Browne, Vincent; Jean Clark, Vincent  
Sumter: T. B. Norton, York; S. J. Williams, Livingston  
Talladega: L. G. Cole, Talladega; Paul Nickerson, Sylacauga  
Tallapoosa: J. E. Cameron, Alexander City; J. R. Chapman, East Tallassee  
Tuscaloosa: R. M. Clements, Tuscaloosa; J. S. Tarwater, Tuscaloosa  
Walker: R. W. Baker, Dora; L. M. Walker, Jasper  
Wilcox: R. C. Simmons, Jr., Pine Apple

# MEMBERS

## A

Adams, M. V., Mobile  
Agee, E. B., Jr., Mobile  
Amendola, A. A., Mobile  
Anderson, B. F., Sellers  
Anderson, W. D., Tuscaloosa  
Andress, D. G., Madrid  
Anlage, H. J., Mobile  
Armistead, S. D., Robertsdale  
Atkinson, W. J., Jr., Mobile  
Austin, B. F., Montgomery

## B

Banks, J. T., Dadeville  
Barr, E. M., Mobile  
Baston, W. P., Moundville  
Benkwith, K. B., Montgomery  
Berrey, I. C., Birmingham  
Berrey, Ruth, Birmingham  
Blake, W. A., Mobile  
Bobo, J. S., Gadsden  
Boozar, I. M., Anniston  
Bostwick, J. L., Montgomery  
Boulware, T. M., Birmingham  
Bragg, E. G., Elba  
Brannon, W. T., Montgomery  
Britton, J. W., Foley  
Brown, A. J., Mobile  
Brown, L. L., Mobile  
Brown, N. L., Mobile  
Bryant, P. A., Bay Minette  
Burke, D. W., Mobile  
Bushnell, J. J., Mobile

## C

Caldwell, H. E., Birmingham  
Cammack, K. R., Grove Hill  
Cannon, E. R., Vredenburgh  
Carmichael, J. C., Birmingham  
Carmichael, J. N., Fairfield  
Carpenter, J. L., New Hope  
Carroll, G. E., Mobile  
Ceravolo, R. J., Mobile  
Chandler, J. R., Magnolia Springs  
Chapman, J. P., Selma  
Chason, O. L., Mobile  
Chenoweth, A. I., Birmingham  
Coffee, J. Y., Huntsville  
Cogburn, H. R., Mobile

Conditt, A. K., Jr., Mobile  
Cook, M. C., Columbiana  
Coston, R. M., Birmingham  
Cotlin, C. S., Jr., Wetumpka  
Cowden, A. M., Mobile  
Crawford, A. S., Plateau  
Cronic, F. M., Eufaula  
Crosby, J. F., Mobile

## D

Davie, N. T., Anniston  
Davis, C. S., Mobile  
Davis, J. E., Leeds  
Denney, J. L., Alexander City  
Dilworth, T. E., Huntsville  
Dismukes, H. M., Mobile  
Dix, A. S., Mobile  
Dixon, R. E., Alberta  
Dodson, J. H., Mobile  
Dodson, M. H., Mobile  
Donald, J. G., Mobile  
Donald, J. W., Mobile  
Donald, T. C., Anniston  
Donald, W. J., Tuscaloosa  
Douglas, G. F., Birmingham  
Dowling, H. B., Mobile  
Dumas, J. F., Mobile  
Dunn, J. E., Wetumpka  
Durrett, J. J., Birmingham

## E

Earl, A. R., Mobile  
Eaves, R. F., Robertsdale  
Edwards, W. S., Birmingham  
Ellis, J. T., Dothan  
England, F. T., Mobile  
Eskridge, Marshall, Mobile

## F

Fair, R. H., Fairhope  
Freeman, A. M., Birmingham  
Frommeyer, W. B., Jr., Birmingham

## G

Gessler, W. F., Fairhope  
Gewin, H. M., Mobile  
Gilchrist, P. P., Mobile  
Gillespie, J. P., Gadsden

Goldfarb, P. M., Mobile  
Graham, S. E., Birmingham  
Greene, G. B., Demopolis

## H

Habeeb, Alfred, Birmingham  
Hale, R. E., Bellamy  
Halliday, G. B., Bay Minette  
Hamner, S. C., Andalusia  
Hannon, W. C., Mobile  
Harris, Crampton, Jr., Mobile  
Harris, E. A., Birmingham  
Harris, R. O., III, Mobile  
Heiter, W. L., Mobile  
Henderson, A. D., Mobile  
Herbert, F. M., Montgomery  
Herrod, H. G., Jr., Tuscaloosa  
Hill, V. H., Mobile  
Hodges, E. J., Scottsboro  
Holcomb, M. C., Jr., Birmingham  
Holley, H. L., Birmingham  
Holmes, W. C., Foley  
Hope, J. C., Jr., Mobile  
Howell, J. P., Selma  
Hudson, Victor, Mobile  
Hughes, V. P., Cullman  
Humphries, J. M., Birmingham

## I

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## J

Jabour, E. P., Montgomery  
Jackson, A. F., Tuscaloosa  
Jarvis, J. R., Birmingham  
Johnson, J. H., Clanton  
Jones, W. N., Birmingham  
Jordan, E. W., Mobile  
Jordan, H. C., Fairhope  
Jordan, O. L., Tuscaloosa  
Joseph, K. N., Birmingham

## K

Kaiser, E. N., Montgomery  
Kessler, C. R., Birmingham  
Kimbrough, B. B., Prichard  
Kimbrough, J. E., Mt. Vernon  
Kimbrough, R. M., Birmingham  
Kimmey, J. M., Elba

Kirby, L. E., Birmingham  
Kirklin, M. A., Mobile  
Koffler, I. A., Mobile

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Ladas, H. E., Mobile  
Lawson, Nettie B., Gadsden  
Lee, L. T., Selma  
Lewis, T. K., Birmingham  
Lightcap, C. A., Mobile  
Lingo, J. K., Mobile  
Linn, J. E., Birmingham  
Long, D. J., Montgomery  
Long, J. R., Marion  
Low, R. E., Brewton  
Lyons, Champ, Birmingham

## Mc

McBryde, R. R., Montgomery  
McCafferty, E. L., Jr., Mobile  
McCrary, G. A., Roanoke  
McFatter, T. K., Dothan  
McLeod, C. D., Andalusia  
McMahon, J. M., Bessemer  
McNally, W. D., Mobile  
McVay, L. V., Mobile  
McVay, L. V., Jr., Mobile

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March, G. M., Mobile  
Matthews, A. D., Ozark  
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Meeker, W. R., Mobile  
Melton, T. A., Andalusia  
Mershon, R. B., Mobile  
Meszaros, J. P., Citronelle  
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Michaelson, Julius, Foley  
Minnich, W. C., Mobile  
Minor, W. H., Mobile  
Moody, Maxwell, Tuscaloosa  
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Moore, J. R., Mobile  
Morton, E. D., Mobile  
Moss, J. E., Mobile  
Muldoon, E. J., Langdale  
Mulherin, H. G., Mobile  
Murphy, S. S., Mobile

## N

Neighbors, J. A., Birmingham  
Nelson, W. B., Bay Minette  
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Dr. Carl Calman, Montgomery  
Dr. D. S. Carroll, Memphis  
Dr. Paul A. Clouse, Evansville  
Dr. W. P. Coats, Mobile  
Dr. L. H. Eubanks, Lucedale, Miss.

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O'Gwynn, J. C., Jr., Mobile  
Oswalt, G. C., Mobile  
Otts, O. M., Jr., Mobile

## P

Parker, S. R., Aliceville  
Parsons, J. L., Birmingham  
Parsons, W. S., Mobile  
Partridge, C. V., Mobile  
Paul, W. G., Montgomery  
Payne, T. J., Jasper  
Peake, J. D., Mobile  
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Perry, G. T., Brewton  
Perry, J. W., Montgomery  
Phillips, S. C., Theodore  
Pitt, C. K., Decatur  
Pitt, L. P., Decatur  
Pitt, Pearl, Decatur  
Polewoda, W. W., Mobile  
Porter, R. W., Mobile  
Praytor, H. B., Montgomery  
Prescott, J. L., Birmingham  
Prescott, W. E., Jr., Birmingham

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Reed, T. W., Brewton  
Reynolds, F. D., Montgomery  
Roberts, M. J., Mobile  
Roe, L. W., Mobile  
Rosen, H. L., Montgomery  
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Rowe, H. S., Mt. Vernon  
Rowe, J. F., Mobile  
Rumpanos, S. N., Mobile  
Rutherford, C. L., Mobile  
Ryan, J. M., Helena

## S

Salter, P. P., Jr., Birmingham  
Schwartz, F. F., Birmingham  
Sellers, I. J., Birmingham  
Sellers, W. L., Jr., Mobile  
Shamblin, W. G., Tuscaloosa  
Shaw, C. C., Loxley  
Simon, H. E., Birmingham  
Simpson, S. P., Gadsden  
Sims, J. A., Talladega  
Sims, M. H., Renfroe  
Skinner, Frank, Mobile  
Skinner, P. B., Fairhope

## VISITORS

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Dr. E. A. Garland, Evansville  
Dr. A. J. Gay, Biloxi  
Dr. W. B. Holden, Oak Ridge  
Dr. H. K. Ivey, Mobile  
Dr. C. R. Lafferty, Gulf Port  
Dr. W. K. Lane, New York  
Dr. L. G. Lewis, Washington, D. C.  
Dr. R. M. Lightfoot, Mobile  
Dr. W. Y. McDaniel, Mobile

Slaughter, J. M., Birmingham  
Smith, R. J., Birmingham  
Smith, W. H. Y., Montgomery  
Snoddy, J. S., Haleyville  
Sorrell, L. E., Birmingham  
Spann, C. L., Dothan  
Speir, R. C., Birmingham  
Stabler, A. L., Birmingham  
St. Amant, C. P., Jr., Atmore  
Stephens, S. H., Mobile  
Stinson, W. E., Siluria  
Strandell, E. L., Brewton  
Strock, C. S., Verbena  
Sullivan, D. F., Mobile  
Sumner, I. C., Mobile

## U

Underwood, J. W., Birmingham  
Ussery, G. C., Roanoke

## T

Taylor, J. L., Mobile  
Terrell, Clyde, Bessemer  
Terry, C. D., Mobile  
Thomas, A. E., Montgomery  
Thompson, W. A., Citronelle  
Tucker, W. C., Birmingham  
Tucker, W. H., Mobile

## V

Vaughn, M. E., Sylacauga

## W

Walker, A. M., Tuscaloosa  
Walker, H. S. J., Jr., Mobile  
Walsh, C. M., III, Mobile  
Warren, C. M., Jr., Mobile  
Warren, W. E., Mobile  
Warren, W. S., Mobile  
Weaver, J. A., Birmingham  
Wert, E. B., Mobile  
West, O. T., Fairfield  
Wiesel, B. H., Birmingham  
Williams, K. B., Hartford  
Williamson, J. S., Verbena  
Windham, S. W., Dothan  
Winsor, C. W., Mobile  
Wood, W. G., Lafayette  
Woodall, W. M., Jr., Birmingham

## Y

Yemm, W. A., Mobile

## Z

Zieman, A. H., Mobile  
Zieman, J. A., Mobile  
Zieman, S. A., Mobile

Dr. J. N. McLane, Pensacola  
Dr. G. W. Moss, Natchez  
Dr. W. E. Nelson, Philadelphia  
Dr. Joseph Olsen, Oakland, Cal.  
Dr. Charles Ramsey, Birmingham  
Dr. J. S. Tucker, Montgomery  
Dr. Millard Tufts, Milwaukee  
Dr. W. J. Weatherford, Pascagoula  
Dr. W. T. Wright, Mobile

Dr. J. B. Youmans, Nashville	Mrs. Sue Erie, Mobile	C. A. Parker, Pensacola
Mrs. B. F. Austin, Montgomery	J. D. Faulk, Birmingham	H. C. Parmer, Montgomery
Mrs. E. R. Cannon, Vredenburgh	G. W. Faust, New Orleans	P. N. Pate, Mobile
Mrs. T. E. Dilworth, Huntsville	P. F. Finstad, Birmingham	H. R. Phillips, Montgomery
Mrs. M. E. Vaughn, Sylacauga	R. Friedbacher, Mobile	H. A. Porter, Pensacola
Mrs. R. K. Wilson, Aliceville	J. W. Frierson, Jr., Jackson, Miss.	Jim Pressly, Mobile
H. H. Altman, Birmingham	D. G. Garrett, New Orleans	W. A. Ray, Pensacola
J. E. Arnett, Mobile	Archie Goldthwaite, Montgomery	Penny Reid, Mobile
J. B. Arnold, New Orleans	C. C. Gray, Jr., Mobile	H. E. Robinett, Mobile
Durwood Bailey, Roanoke	R. A. Gross, Memphis	W. E. Rogers, Mobile
J. E. Balthrop, Pensacola	H. C. Hagan, Jr., Montgomery	E. J. Rolan, Elkhart, Ind.
C. L. Barrett, Mobile	W. H. Hale, Montgomery	R. M. Rowan, Dothan
L. S. Begin, Atlanta	S. T. Harrison, Mobile	D. L. Rutledge, Mobile
T. J. Bender, Sr., Mobile	Ruth Heath, Mobile	Eli Sedlin, Mobile
Sam Blackwell, Mobile	Harold Heller, Los Angeles	J. W. Schermer, Jr., Mobile
Margaret Blicher, New York	J. W. Hodges, Birmingham	Eric Simmons, Mobile
S. B. Bogue, Decatur	M. P. Holliman, Mobile	H. F. Singleton, Birmingham
Lee Bosarge, New York	Robert Jemison, III, Birmingham	E. R. Skinner, Mobile
J. W. Bradley, Jr., Mobile	E. F. Johnson, Atlanta	Bill Smith, Birmingham
Warren Breneman, Mobile	H. W. Jones, Chicago	H. P. Smith, Atlanta
F. M. Bruner, Mobile	B. C. Kaiser, Birmingham	L. H. Smith, Mobile
A. M. Casey, Atlanta	R. F. Klein, Mobile	Mrs. E. R. Solomon, Headland
J. C. Charles, Nashville	J. M. Kuhlik, New York	J. E. Stevens, Birmingham
Lloyd Clay, Mobile	Walter Laubenthal, Mobile	Dick Strays, Nutley, N. J.
Syl Cocchiara, Greenville, S. C.	A. D. Lear, New Orleans	W. B. Tatum, Mobile
C. C. Coker, Birmingham	W. F. Lee, Jr., Birmingham	O. C. Tisdale, Jr., Montgomery
W. C. Cothorn, Birmingham	Chas. Lyle, Spring Hill	K. E. Trim, Birmingham
Candler Crim, Decatur	R. H. Mangold, Birmingham	L. M. Wachman, Birmingham
Bob Davis, Birmingham	N. H. Massengill, Bristol, Tenn.	F. C. Waggoner, Birmingham
W. D. Davis, Montgomery	H. O. McCumber, Glendale, Cal.	Ben Ward, Birmingham
H. R. Dobbs, Montgomery	John McDavid, Mobile	O. C. Ware, Jr., Mobile
R. G. Dodd, New Orleans	A. K. McMillan, Lucedale, Miss.	R. H. Weaver, Mobile
E. A. Dodson, Jr., Birmingham	S. F. Messina, New Orleans	O. H. Webb, Birmingham
W. A. Dozier, Jr., Montgomery	Meta O'Neal, Birmingham	Al Weiss, Mobile
L. E. Edmondson, Montgomery	Wm. O. Owings, Brent	Florence A. White, New York
D. M. Egbert, Birmingham		Barbara Willetts, New York
B. J. Eich, Birmingham		G. J. Williamson, Montgomery
A. G. English, Philadelphia		R. S. Winslow, Birmingham

SUMMARY OF ANNUAL ATTENDANCE

Year	Life Counsellors	Active Counsellors	Delegates	Members	Visitors	Total	Place
1923	14	48	66	106	50	284	Mobile
1924	29	70	84	230	79	492	Montgomery
1925	27	78	97	328	113	643	Birmingham
1926	33	74	105	194	131	537	Mobile
1927	36	85	104	252	87	564	Montgomery
1928	33	77	108	507	106	831	Birmingham
1929	19	60	102	176	109	466	Mobile
1930	32	83	106	286	102	609	Montgomery
1931	26	80	116	410	158	790	Birmingham
1932	19	60	101	158	133	471	Mobile
1933	21	74	103	264	85	547	Montgomery
1934	26	75	97	404	53	655	Birmingham
1935	15	59	91	180	83	428	Mobile
1936	23	79	95	265	68	530	Montgomery
1937	25	80	96	396	81	678	Birmingham
1938	18	65	78	157	63	381	Mobile

Year	Life Counsellors	Active Counsellors	Delegates	Members	Visitors	Total	Place
1939	29	79	96	326	84	614	Montgomery
1940	29	77	105	401	229	841	Birmingham
1941	29	66	86	211	91	483	Mobile
1942	33	75	105	249	82	544	Montgomery
1943	31	71	83	321	127	633	Birmingham
1944	33	72	92	214	110	521	Montgomery
1945	Meeting Cancelled						
1946	38	81	87	330	127	663	Birmingham
1947	34	76	91	333	124	658	Birmingham
1948	24	64	87	239	127	541	Mobile
1949	31	84	93	288	106	602	Montgomery
1950	26	85	91	391	118	711	Birmingham
1951	21	75	84	281	115	576	Mobile
1952	27	81	90	314	141	653	Montgomery
1953	24	81	91	403	129	728	Birmingham
1954	15	62	83	267	139	566	Mobile

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## AMERICAN MEDICAL ASSOCIATION NEWS

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### BREATHING EXERCISES AID IN HELPING PERSONS STOP SMOKING

Exercises which teach heavy smokers proper breathing when not smoking may help them stop smoking, according to Dr. William Kaufman, Bridgeport, Conn.

"Many heavy smokers find it impossible to give up smoking for more than a day or so, even though they realize that smoking causes their unpleasant or even alarming cardiovascular and bronchopulmonary symptoms," Dr. Kaufman wrote in the May 22 Journal of the American Medical Association.

"The patient may insist that, despite his tobacco-induced symptoms, the only time he feels emotionally relaxed and comfortable is when he is smoking."

Dr. Kaufman said he found the reason heavy smokers feel uneasy when they try to give up smoking is that they do not breathe properly when they are not smoking. Instead of proper steady, deep breaths, heavy smokers take short breaths when not smoking. This results in an uncomfortable sense of breathlessness and pressure on the chest, and may cause the individual to become uneasy, restless, tense, tired and anxious.

"As a result of these observations, it occurred to me that with breathing exercises, the heavy smoker might learn to breathe normally even when he was not smoking," Dr. Kaufman stated. "This would make it much easier for him to break himself of the tobacco habit."

"I have prescribed breathing exercises in which the patient is taught to breathe out and then in properly 16 times a minute. By practicing these breathing exercises for five minutes eight to ten times a day for a month, the patient gradually regains his ability to breathe in a manner that by inspection approximates normal pulmonary ventilation even when not smoking."

"Once a heavy smoker has acquired the habit of breathing properly, he can feel relaxed and comfortable when not smoking. After such preliminary training, 15 heavy smokers (each smoked over 50 cigarettes a day) found it possible to stop smoking with-

out experiencing undue difficulty. Each of these patients had tried repeatedly before to give up smoking permanently, but without success."

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### HEART KEPT FUNCTIONING BY MASSAGE FOR 24 MINUTES

The heart of a 36-year-old woman was kept functioning by hand massage for the unusually long period of 24 minutes, three Tampa, Fla., physicians report.

In most cases of cardiac failure, spontaneous heartbeat usually resumes after about three to seven minutes of massage and oxygen.

Among the longest periods previously reported was one of 30 minutes, during an operation on a two-year-old girl in Indianapolis in 1951. A 30-year-old Philadelphia woman was reported to have had hand and electric massage for 50 minutes before her heart started beating again.

Although damage to the brain is very likely to occur in cases of lengthy heart stoppage, the Tampa woman showed no evidence of damage after the operation or on release from the hospital, the physicians reported in the current Archives of Surgery, published by the American Medical Association.

"This should encourage others in meeting similar situations to continue their efforts for a long period of time," they said.

The woman had a chronic heart ailment with surgery offering "the only chance for prolongation of life." During an operation on the heart, it stopped beating.

After about a minute, the surgeon began methodically squeezing the heart at about 40 to 50 times a minute. One of the chambers of the heart already had been opened and an assistant surgeon steadied a clamp on the opening while the surgeon continued massage for 24 minutes.

When regular heart action resumed, the surgeon completed the operation. The woman was discharged from the hospital 18 days later.

The physicians pointed out that they believed the patient suffered no ill effects to the brain because hand massage was started immediately after cardiac failure.

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### THE JOURNAL OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

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- VII. Book Abstracts and Reviews

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